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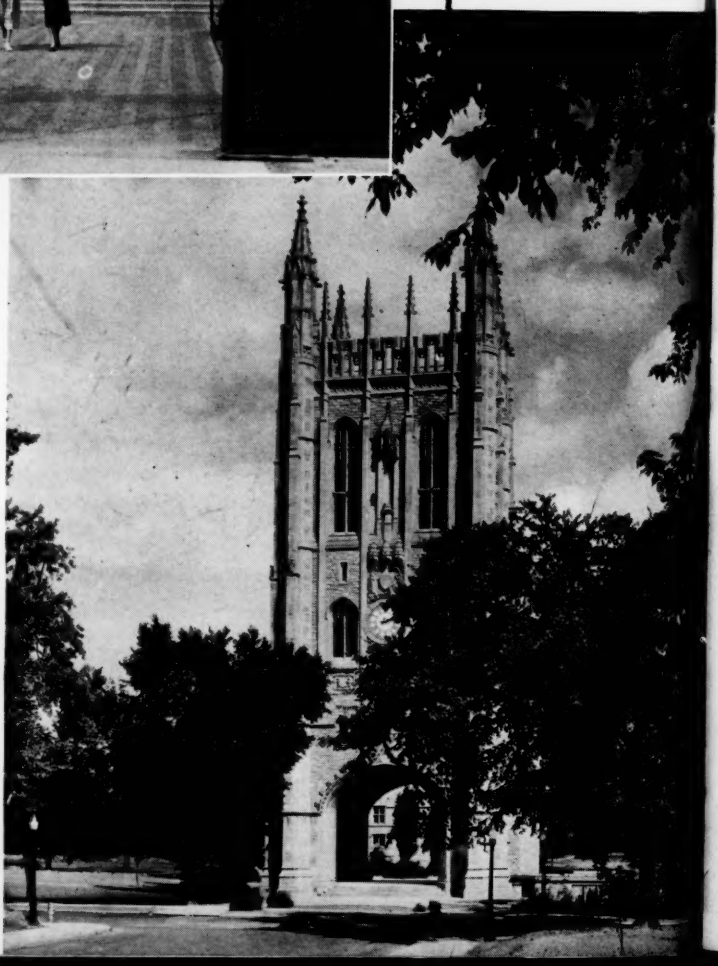
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Barnard College of Columbia University was organized in 1889 to provide instruction for women which should be identical with or equivalent to that provided for men in Columbia College. The fiftieth anniversary will be appropriately celebrated on November 14 and 15.



The chimes of Memorial Tower at the University of Missouri will welcome alumni and friends to the November activities which will commemorate the centennial of the oldest state university west of the Mississippi. The Tower is considered one of the most perfect examples of Gothic architecture in the United States.

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THE VALUE OF RANK IN HIGH SCHOOL GRADUATING CLASS FOR PREDICTING FRESHMAN SCHOLARSHIP

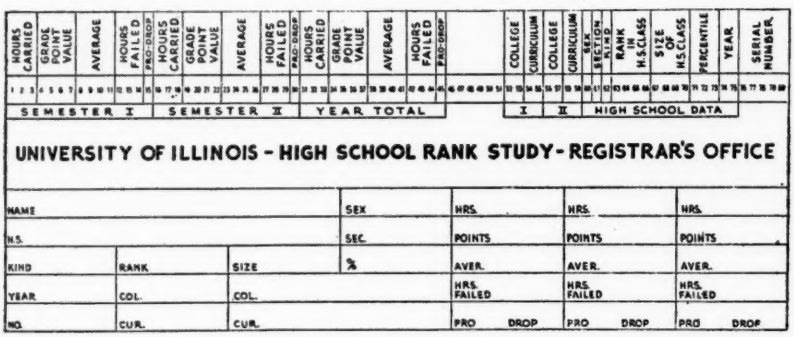
E. C. SEYLER

IN THE January 1937 issue of the *Bulletin* of the American Association of Collegiate Registrars, G. P. Tuttle, Registrar of the University of Illinois, presented "a picture of what happened to students entering the University in September 1935 and a comparison of their scholarship here with their scholarship in high school as measured by class rank."[1] Similar data have now been obtained for the freshmen admitted in September 1936 and September 1937, and the data for all three classes have been combined. Zero-order correlations between percentile ranks in high school class and first-year scholastic records at Illinois, as well as regression coefficients and equations, have been computed for the purpose not only of presenting a general picture of the scholastic success or failure of these students, but also of determining whether or not rank in high school graduating class is a reliable index for predicting the success of college freshmen in their first year at the University.

[1] Tuttle, G. P., "The Predictive Value of Rank in High School Graduating Class," *Bulletin* of the American Association of Collegiate Registrars, 12:111-118, January, 1937.

The data for this study were compiled as follows: high school principals were requested to indicate the student's rank in his graduating class on the transcript of credits submitted in application for admission to the University. Rank was indicated by giving the student's relative position from the top of the class as related to the total number in the class, such as, first in a class of 65, twenty-second in a class of 425, etc. These individual ranks were then computed into percentile ranks.

A Hollerith punched card was prepared for each student, on which were recorded and punched his percentile rank in his high school graduating class, his scholastic record at the University for each semester and for the year, including hours carried, grade points made, scholastic average, hours failed, whether or not he was placed on probation or dropped for poor schlarship, and additional data that are not presented in this study. A facsimile of the punched card used for these data is presented below:



The University of Illinois has a literal grading system. A, B, C, and D are passing grades, and E a failure. Weighted numerical equivalents were assigned to each grade as follows: A=5 points, B=4, C=3, D=2, and E=1. The freshman year scholastic average for each student was determined by multiplying the number of semester hours of A grade by 5, B by 4, C by 3, D by 2 and E by 1. The sum of these products constituted the total "points" earned by the student during the year. The total "points" earned, divided by the total number of semester hours for which the student was registered, gave the student's scholastic average for his freshman year in college. In the computations of the scholastic average, the required courses in military science and physical education were excluded, with

the exception of those professional physical education courses prescribed in the curriculum leading to the degree of Bachelor of Science in Physical Education for students registered in the School of Physical Education.

After these data were punched on the cards, the various summaries presented herewith, including the data necessary for computing the coefficients of correlation, were obtained by means of a counting sorter and a numerical tabulator. A calculator was used for determining the various percentages and final calculations.

A total of 8634 freshmen were admitted in September 1935, September 1936 and September 1937. Of this number, 1628 or 18.86 per cent were eliminated from the study for the following reasons: 1244 because they did not complete two semesters of work (890 of these completed one semester only), 349 because their rank in class was not given, and 35 because of "excused" grades in either the first or second semester of attendance, making their records incomplete for the year. The data in this study are based on the records of the remaining 7006 students, whose rank in class was known and whose freshman year records were complete. This number represents 81.14 per cent of the total number admitted.

A brief summary of the scholastic achievement of these 7006 cases as a group is as follows: 2.65 per cent ranked in the lowest ten per cent of their high school graduating classes; 22.62 per cent ranked in the highest 10 per cent. When broken into quarter divisions, 9.51 per cent ranked in the lowest quarter of their graduating classes, 16.81 per cent in the next to the lowest quarter, 26.05 per cent in the next to the highest quarter and 47.63 per cent in the highest quarter. Of these 7006 entering freshmen (73.68 per cent) ranked in the upper half of their respective graduating classes, while 1844 (26.32 per cent) ranked in the lower half. The mean percentile rank for the entire group of 7006 cases is 66.23. The median percentile rank is 72.07.

The freshman year scolastic average in college for the 7006 cases is 3.178 or .178 points above a C average; 3997 or 57.04 per cent made a C average or better, while 3009 or 42.96 per cent made an average below C. Two thousand seven hundred sixty-four (2764) or 39.45 per cent had at least one failure, 992 or 14.16 per cent were placed on probation for poor scholarship at the end of the freshman year, while 825 or 11.78 per cent were dropped for poor scholarship.

This summary presents two items that may be of particular interest. First, in spite of the fact that the University of Illinois makes no attempt to deny admission to low-ranking high school students, almost one-half (47.63 per cent) came from the highest quarter of their respective graduating classes, while 73.68 per cent ranked in the upper half of their graduating classes. The second item is that only 57.04 per cent of the 7006 students maintained a C average or better, while 42.96 per cent fell below a C average. This would seem to indicate a rather severe grading system. It should be remembered, however, that the mean and median percentile ranks of any high school graduating class are fifty, while the mean percentile rank of the 7006 cases included in this study is 66.23 and the median percentile rank, 72.07.

The individual student, immediately upon entering the University, finds the competition to be keener than it was in high school. He must compete with more and with better students, with the result that the effort and ability required to maintain a C average in high school, when applied to college work, will probably result in a scholastic average below C in the first year in college.

Table I below shows the relationship between the achievement of these 7006 freshmen in high school as indicated by their percentile ranks and in college as indicated by their freshman scholastic averages.

From Table I it may be seen that there is a definite positive correlation between rank in high school graduating class and fresh-

TABLE I
FRESHMAN SCHOLARSHIP AND RANK IN CLASS

Division of High School Class	Number of Cases	Per Cent of Total Cases	Average Grade Freshman Year	Per Cent of Hours Failed	Per Cent of Students with at Least One Failure
Highest 10%.....	1585	22.62	3.938	1.54	9.27
Highest 25%.....	3337	47.63	3.638	3.37	19.00
Next to Highest 25%....	1825	26.05	2.935	10.72	47.01
Next to Lowest 25%....	1178	16.81	2.650	16.27	64.26
Lowest 25%.....	666	9.51	2.413	23.32	77.33
Highest 50%.....	5162	73.68	3.392	5.93	28.90
Lowest 50%.....	1844	26.32	2.565	18.80	68.98
Lowest 10%.....	186	2.65	2.278	26.34	78.49
All Freshmen.....	7006	100.00	3.178	9.27	39.45

man scholastic average. Considering the group by quarter divisions it is found that the group ranking in the lowest quarter of their graduating classes made a scholastic average of 2.413; in the next to the lowest quarter, 2.650; in the next to the highest quarter, 2.935; and in the highest quarter, 3.638.

The per cent of students with failures is greatest for the group ranking in the lowest quarter and least for the group ranking in the highest quarter. Even in the latter group, however, 19.00 per cent of the 3337 freshmen received at least one failure, and 3.37 per cent of the hours carried were failed. Approximately one out of every eleven of the students constituting the highest 10 per cent of their respective graduating classes failed in at least one subject. These failures constituted 1.54 per cent of the total hours carried. At the other extreme 21.51 per cent of the students coming from the lowest 10 per cent of their graduating classes completed their freshman year without any failures, and approximately three out of every four hours carried were successfully passed.

When this goup of 7006 freshmen is separated according to rank by quarters of the high school graduating classes and also according to the colleges in which they registered, certain further interesting facts are presented. These are shown in Table II.

It may be noted from this table that there is a definite positive correlation between the scholastic average and the rank in class as indicated by quarters. Ascending from the lowest to the highest quarter it may be noted that there is a decided improvement in the scholastic averages for all colleges, with the exception of Education (curriculum of Industrial Education), in which there were only nine cases. For example, Commerce students ranking in the lowest quarter made an average of 2.264; those ranking in the next to the lowest quarter, 2.593; in the next to the highest quarter, 2.898; and in the highest quarter an average of 3.619.

When these freshmen are considered in groups by quarters of the graduating classes, it appears that only those ranking in the highest quarter maintained satisfactory scholastic averages as a group. Only two of the college groups in the next to the highest quarter averaged at least a C, namely, the College of Fine and Applied Arts, with an average of 3.077, and the School of Physical Education, with an average of 3.011. It has been suggested that certain skills are required for successful work in the curricula offered by these two colleges

TABLE II

FIRST YEAR SUCCESS ACCORDING TO COLLEGE AND HIGH SCHOOL RANK FOR FRESHMEN ADMITTED IN SEPTEMBER 1935, 1936, 1937

College	Total Admitted	Lowest 25%			Next to Lowest 25%			Next to Highest 25%			Highest 25%		
		Number Admitted	Average Grade	Per Cent Hours Failed	Number Admitted	Average Grade	Per Cent Hours Failed	Number Admitted	Average Grade	Per Cent Hours Failed	Number Admitted	Average Grade	Per Cent Hours Failed
L. A. S.....	3006	234	2.433	23.05	451	2.643	16.96	731	2.924	11.33	1590	3.678	3.27
Commerce..	1417	193	2.264	26.00	295	2.593	16.13	401	2.898	10.46	528	3.619	3.31
Educ. Ind...	9	2	1.924	41.51	2	2.466	13.33	3	2.797	11.24	2	2.557	25.00
Engineering.	1097	94	2.373	27.67	182	2.637	18.16	299	2.934	12.01	522	3.620	4.39
Agriculture.	916	54	2.312	22.96	126	2.591	16.54	258	2.967	9.04	478	3.548	2.71
F. A. A.....	312	21	2.702	18.08	56	2.784	14.42	73	3.077	8.42	162	3.685	2.58
Phys. Educ..	249	68	2.787	12.95	66	2.968	8.33	60	3.011	7.93	55	3.435	3.74
All Colleges.	7006	666	2.413	23.32	1178	2.650	16.27	1825	2.935	10.72	3337	3.638	3.37

that are not measured by rank in high school class.[2] It should be remembered that this statement applies only to students as a group and should not be interpreted to mean that only those students ranking in the highest quarter of their graduating classes do satisfactory work in college. As a matter of fact, it was found that those students graduating in the upper half of their classes, when considered as a group, made a satisfactory scholastic average of 3.392. When individual students were considered, it was found that some ranking in the lowest tenth of their graduating classes maintained satisfactory scholastic records in college. This fact will be pointed out more definitely in the explanation of Table III, which follows. The per cent of hours failed by students within each college is greatest for those students coming from the lowest quarter of their graduating classes and least for those coming from the highest quarter. Furthermore, the per cent of hours failed decreases in very noticeable amounts as the scale is ascended from the lowest to the highest quarter.

The data presented in Tables I and II indicate a definite positive correlation between rank in high school class and success in the freshman year in college in so far as consideration of these students by groups is concerned. Those coming from the lowest quarter of their graduating classes definitely do the poorest work in college as a group, while those coming from the highest quarter definitely do the best work in college as a group. This fact becomes even more noticeable when the upper and lower divisions of the high school graduating classes are compared, using the scholastic average of the entire group of 7006 cases as a unit of measurement.

As stated above, the 7006 students averaged 3.178 for their freshman year. This average, which is slightly above a C (3.000), is used in Table III as the unit of measurement for comparing the "best" high school graduates with the "poorest," as judged by their rank in their graduating classes.

From Table III it may be noted that 73.87 per cent of those students from the highest quarter obtained a scholastic average above that made by the entire freshman group, while 25.98 per cent obtained a scholastic average below that made by the entire group. The remaining .15 per cent had an average of 3.178. In the lowest

[2] Tuttle, G. P., "The Predictive Value of Rank in High School Graduating Class." *Bulletin of the American Association of Collegiate Registrars,* 12:111-118, January, 1937.

TABLE III

PREDICTIVE VALUE OF RANK IN HIGH SCHOOL CLASS AS DISCLOSED BY FIRST YEAR RECORDS OF FRESHMEN ADMITTED IN SEPTEMBER 1935, 1936, 1937

1. Number and per cent of freshmen ranking in the highest and lowest quarters of high school class, with yearly averages above and below average for all freshmen

College	Highest Quarter					Lowest Quarter				
	Number of Freshmen in Group	Above Freshman Average		Below Freshman Average		Number of Freshmen in Group	Above Freshman Average		Below Freshman Average	
		No.	Per Cent	No.	Per Cent		No.	Per Cent	No.	Per Cent
L. A. S.	1590	1195	75.16	394	24.78	234	32	13.68	202	86.32
Commerce	528	383	72.54	143	27.08	193	7	3.63	186	96.37
Educ. Ind.	2	1	50.00	1	50.00	2	0	.00	2	100.00
Engineering	522	379	72.61	143	27.39	94	7	7.45	86	91.49
Agriculture	478	343	71.76	133	27.82	54	5	9.26	49	90.74
F. A. A.	162	128	79.01	34	20.99	21	6	28.57	15	71.43
Phys. Educ.	55	36	65.45	19	34.55	68	12	17.65	56	82.35
All Colleges	3337	2465	73.87	867	25.98	666	69	10.36	596	89.49

2. Number and per cent of freshmen ranking in the highest and lowest tenths of high school class, with yearly averages above and below average for all freshmen

	Highest Tenth					Lowest Tenth				
L. A. S.	806	714	88.59	92	11.41	65	5	7.69	60	92.31
Commerce	248	212	85.48	35	14.11	57	0	.00	57	100.00
Educ. Ind.	—	—	—	—	—	—	—	—	—	—
Engineering	236	205	.86	31	13.14	23	1	4.35	21	91.30
Agriculture	210	180	85.71	29	13.81	16	1	6.25	15	93.75
F. A. A.	68	60	88.23	8	11.77	3	1	33.33	2	66.67
Phys. Educ.	17	17	100.00	0	.00	22	2	9.09	20	90.91
All Colleges	1585	1388	87.57	195	12.30	186	10	5.38	175	94.09

quarter only 10.36 per cent exceeded the general average of 3.178, while 89.49 per cent fell below this average. In the group representing the highest tenth in high school rank, 87.57 per cent were above the general average of 3.178, while 12.30 per cent were below. In the lowest tenth 5.38 per cent made an average above the general average of 3.178, while 94.09 per cent fell below. Here again there is a definite indication of positive correlation between rank in class and success in college.

Up to this point the records of the 7006 students involved in the study have been considered only in terms of groups. It appears that there is every indication to believe that when these students are considered in groups, there is definite positive relationship between the quality of work done in high school, as indicated by rank in class, and success in college, as indicated by freshman scholastic average. It also appears, from the tables presented above, that the lower the high school rank, the lower the scholastic average made in college. There are exceptions, however, in that some "poor" high school students do good work in their freshman year in college, while some "good" high school students do poor work.

In order to determine the amount of relationship between rank in class and success in the freshman year of college, zero-order correlation coefficients and regression coefficients were calculated for the 7006 students. Ayres' method of computing the above was used.[3] The formulae are as follows:

$$r=\frac{\Sigma XY-\frac{\Sigma X\cdot\Sigma Y}{N}}{\sqrt{\left(\Sigma X^2-\frac{(\Sigma X)^2}{N}\right)\left(\Sigma Y^2-\frac{(\Sigma Y)^2}{N}\right)}}$$

$$b_y=\frac{\Sigma XY-\frac{\Sigma X\cdot\Sigma Y}{N}}{\Sigma X^2-\frac{(\Sigma X)^2}{N}}$$

[3] Ayres, L. P., "A Shorter Method for Computing the Coefficient of Correlation," *Journal of Educational Research,* 1:216-221, March, 1920.

Ayres, L. P., "Coefficients of Regression," *Journal of Educational Research,* 1:398-402, May, 1920.

In the above formula for r, the coefficient of correlation between rank in class and freshman scholastic average, X represents the percentile rank, Y the freshman year scholastic average, and N the total number of cases. The summations were obtained by means of a punched card numerical tabulator and represent the actual summation of all the variables found in the 7006 cases. They are not subject to the corrections necessary when a correlation table is used. The regression coefficient b_y determines the amount of deviation in the Y variable (freshman scholastic average), corresponding to a change of one unit in the X variable (percentile rank in class).

TABLE IV
RELATION OF PERCENTILE RANK IN HIGH SCHOOL GRADUATING CLASS AND FRESHMAN SCHOLASTIC AVERAGE

College	Cases	Mean	Standard Deviation	Coefficient of Correlation	†Coefficient of Regression b_y
L. A. S.	3006				
(1) Percentile Rank		69.24	25.57	.60±.0078	.0198
(2) Freshman Average		3.249	.84		
Commerce	1417				
(1) Percentile Rank		60.27	27.37	.65±.0103	.0192
(2) Freshman Average		3.025	.81		
Engineering	1097				
(1) Percentile Rank		66.71	25.02	.59±.0133	.0194
(2) Freshman Average		3.172	.81		
Agriculture	916				
(1) Percentile Rank		69.59	23.71	.62±.0137	.0191
(2) Freshman Average		3.181	.73		
F. A. A.	312				
(1) Percentile Rank		68.13	24.31	.57±.0258	.0172
(2) Freshman Average		3.320	.74		
Physical Education	249				
(1) Percentile Rank		47.53	27.38	.39±.0362	.0088
(2) Freshman Average		3.032	.62		
*All Colleges	7006				
(1) Percentile Rank		66.23	26.13	.61±.0051	.0188
(2) Freshman Average		3.178	.81		

† The coefficient of regression b_y determines the amount of deviation in the Y variable (freshman scholastic average), corresponding to a change of one unit in the X variable (percentile rank in class).

* Includes 9 cases in Industrial Education.

Table IV presents the correlations between the two variables, rank in class and freshman scholastic average, along with the mean percentile rank and the mean scholastic average for each college, with their corresponding standard deviations. The amount of deviation

in the freshman scholastic average, corresponding to a change of one unit in rank in class, is indicated by the regression coefficient b_y. Since the College of Education was represented by only nine cases, it is not included in the computations, except in those involving the entire group of 7006 cases.

The data in Table IV show, as in Table II, the difference in the quality of students received in the different colleges according to high school rank, and the quality of work done in the several colleges by the students enrolled therein. It will be noted that the mean percentile rank in class ranges from 47.53 for the School of Physical Education to 69.59 for the College of Agriculture. The mean scholastic average ranges from 3.025 for the College of Commerce to 3.320 for the College of Fine and Applied Arts. The coefficient of correlation ranges from .39 for the School of Physical Education to .65 for the College of Commerce. The amount of relationship between rank in class and freshman average is definitely greater in the College of Commerce than in the School of Physical Education. It is to be noted that the probable errors of the coefficients are small enough so that the coefficients may be considered reliable.

In a normal distribution 68.26 per cent of the cases may be found within a range of ± 1 sigma or, standard deviation, from the mean. If the distribution of cases in this study is normal, it may be expected that 68.26 per cent of the 7006 cases, or 4782 cases, will fall within the range of the mean percentile rank (66.23) $\pm$ 1 sigma (26.13), or approximately the ninety-second and the fortieth percentile rank. By actual count it was found that 4501 cases (64.24 per cent) fell within this range, while 4645 cases (66.30 per cent) fell within the range of the ninety-third and the fortieth percentile rank.

From Table IV it appears that the amount of deviation in the freshman scholastic average, corresponding to a change of one unit in rank in class, is greatest in the College of Liberal Arts and Sciences (.0198) and least in Physical Education (.0088). Thus the most probable average for the student in Liberal Arts and Sciences with a percentile rank of 51 will be .0198 points greater than that of the student with a percentile rank of 50. In Physical Education, the difference would be only .0088 points. Difference in rank in class in high school, therefore, apparently means a much greater difference in scholastic average for students in Liberal Arts and Sciences than in Physcial Education.

By means of the regression equation in score form, the most probable scholastic average was determined for each percentile rank from 1 to 100 by colleges and for the group as a whole. The regression equation in score form is as follows: $Y - M_y = b_y (X - M_x)$— and here Y represents the scholastic average to be predicted, M_y the mean scholastic average, b_y the regression coefficient, X the percentile rank given, and M_x the mean percentile rank. In predicting scholastic average for given percentile ranks by means of this regression equation, it is possible to obtain only the most probable scholastic average. In order to show just how reliable, i.e., how probable these predicted scholastic averages are, the standard errors of estimate were determined.

Since the presentation of these predictions requires considerable space, they are presented only in part for certain percentile ranks, as indicated in Table V.

TABLE V
MOST PROBABLE SCHOLASTIC AVERAGE FOR GIVEN PERCENTILE RANKS SHOWN BY COLLEGES

Given Percentile Rank of	L. A. S.	Com.	Engr.	Agric.	F. A. A.	P. E.	All Colleges
61	3.0713	3.0229	3.0390	3.0100	3.1856	3.1443	3.0643
60	3.0515	3.0037	3.0196	2.9909	3.1684	3.1355	3.0455
59	3.0317	2.9845	3.0002	2.9718	3.1512	3.1267	3.0267
58	3.0119	2.9653	2.9808	2.9527	3.1340	3.1179	3.0079
57	2.9921	2.9461	2.9614	2.9336	3.1168	3.1091	2.9891
56	2.9723	2.9269	2.9420	2.9145	3.0996	3.1003	2.9703
55	2.9525	2.9077	2.9226	2.8954	3.0824	3.0915	2.9515
54	2.9327	2.8885	2.9032	2.8763	3.0652	3.0827	2.9327
53	2.9129	2.8693	2.8838	2.8572	3.0480	3.0739	2.9139
52	2.8931	2.8501	2.8644	2.8381	3.0308	3.0651	2.8951
51	2.8733	2.8309	2.8450	2.8190	3.0136	3.0563	2.8763
50	2.8535	2.8117	2.8256	2.7999	2.9964	3.0475	2.8575
Regression coefficient b_y.....	.0198	.0192	.0194	.0191	.0172	.0088	.0188
Standard error of estimate σ (est$_y$)..	.6692	.6102	.6572	.5732	.6060	.5674	.6438

From Table V it may be stated that the most probable scholastic average that would be made during the first year in college by the freshman entering the College of Liberal Arts and Sciences with a percentile rank of 50 in his high school graduating class would be 2.8535, with a standard error of estimate of .6692, and that the chances are 68 in 100 that the actual average would fall within the

limits of 2.8535 ± .6692, or between 3.5227 and 2.1843. It is practically certain that the scholastic average would fall within the limits 2.8535 ± 3 × .6692, or between 4.8611 and .8459. Stated in another form, it may be said that the chances are 2.15 to 1 that the average made would differ from 2.8535 by less than .6692. Similarly, if a freshman with the same percentile rank of 50 were to enter Commerce, his most probable scholastic average would be 2.8117, with a standard error of estimate of .6102, and the chances are 68 in 100 that the actual average would fall within the limits of 2.8117 ± .6102, or between 3.4219 and 2.2015. Similar predictions may be made for other colleges and for any percentile rank.

The question now arises as to what percentile rank is required within each college to predict a satisfactory scholastic avearge. The assumption has been made that a minimum average of C (3.000) represents stisfactory work in the freshman year. As the scale (see Table V) of predicted averages for each percentile rank is ascended from 1 to 100 in the College of Liberal Arts and Sciences, it is found that a most probable average of at least 3.000 is not reached until the fifty-eighth percentile rank, where the most probable average is 3.0119. The most probable average for any percentile rank below the fifty-eighth is less than 3.000, while from the fifty-eighth to the one hundredth percentile rank the most probable average is greater than 3.000. Therefore, in order to predict a most probable average of at least 3.000 for a student entering Liberal Arts and Sciences, he must have at least a percentile rank of 58 in his high school graduating class.

The required percentile ranks for the remaining colleges are as follows: Commerce, 60; Engineering, 59; Agriculture, 61; Fine and Applied Arts, 51; Physical Education, 45; and All Colleges when considered as a group, 58. It would appear from these predictions than when there is a doubt as to scholastic ability, the student's chances of making at least a C average are better in Physical Education than in any other college.

In order to test the accuracy of these predictions, the following computations were made:

1. All of the cases within each college falling below the percentile rank at which a most probable average of C or 3.000 was reached were tabulated to determine the per cent of students who actually failed to make a 3.000, and the per cent who did make a 3.000

average. The same tabulations were made for the students ranking at and above this percentile rank.

2. An attempt was made to determine the percentile rank below which prospective students could be denied admission without doing an

TABLE VI

SUMMARY OF CASES BY COLLEGES HAVING PERCENTILE RANKS ABOVE AND BELOW THE PERCENTILE RANK AT WHICH A MOST PROBABLE AVERAGE OF C IS REACHED

A. Summary of cases having percentile ranks below the percentile rank at which a most probable average of C is reached

College	Percentile Rank at Which the Most Probable Average of C or 3.000 Is Reached	Total Number of Cases	Cases Falling below Percentile Rank Indicated		Cases Falling below Percentile Rank Indicated Making at Least a C Average		Cases Falling below Percentile Rank Indicated Failing to Make at Least a C Average	
			Number	Per Cent	Number	Per Cent	Number	Per Cent
L. A. S.....	58	3006	874	29.08	238	27.23	636	72.77
Commerce...	60	1417	642	45.31	133	20.72	509	79.28
Engineering..	59	1097	353	32.18	88	24.93	265	75.07
Agriculture..	61	916	272	29.69	73	26.84	199	73.16
F. A. A.....	51	312	81	25.96	29	35.80	52	64.20
Phys. Educ...	45	249	114	45.78	43	37.72	71	62.28
*All Colleges	58	7006	2327	33.21	600	25.79	1727	74.21

B. Summary of cases having percentile ranks at or above the percentile rank at which a most probable average of C is reached

College	Percentile Rank at Which the Most Probable Average of C or 3.000 Is Reached	Total Number of Cases	Cases Falling at or above Percentile Rank Indicated		Cases Falling at or above Percentile Rank Indicated Making at Least a C Average		Cases Falling at or above Percentile Rank Indicated Failing to Make at Least a C Average	
			Number	Per Cent	Number	Per Cent	Number	Per Cent
L. A. S.....	58	3006	2132	70.92	1579	74.06	553	25.94
Commerce...	60	1417	775	54.69	559	72.13	216	27.87
Engineering..	59	1097	744	67.82	528	70.97	216	29.03
Agriculture..	61	916	644	70.31	463	71.89	181	28.11
F. A. A.....	51	312	231	74.04	179	77.49	52	22.51
Phys. Educ...	45	249	135	54.22	83	61.48	52	38.52
*All Colleges	58	7006	4679	66.79	3396	72.58	1283	27.42

* Includes 9 cases in Industrial Education.

injustice to more than 10 per cent of these applicants, i.e., not more than 10 per cent of those denied admission would have been likely to make a satisfactory scholastic average of C or 3.000.

From Table VI it may be seen that 874 of the 3006 cases in Liberal Arts and Sciences had a percentile rank from 0 up to and including the fifty-seventh or below the percentile rank (58) at which the most probable average is a 3.000. These 874 cases constitute 29.08 per cent of the total number of cases in this college. Two hundred thirty-eight of these 874 or 27.23 per cent actually made a 3.000 average or better, while 636 or 72.77 per cent failed to make at least a 3.000 average. If the prediction is made, therefore, that a student must have at least a percentile ranking of 58 in order to maintain a 3.000 average in the College of Liberal Arts and Sciences, the prediction would be wrong in approximately one-fourth of the cases. Of the 2132 cases in Liberal Arts and Sciences having a percentile rank of 58 or above, 1579 or 74.06 per cent made at least a 3.000 average, while 553 or 25.94 per cent failed to make at least a 3.000. Here again the prediction would be in error in approximately one-fourth of the cases.

A comparison of the two colleges having the highest and lowest coefficients of correlation in regard to the accuarcy of prediction may be of interest. The amount of relationship between rank in class and freshman scholastic average for students registering in the College of Commerce is indicated in Table IV by the coefficient of correlation of .65. The School of Physical Education has a coefficient of correlation of .39. In Table VI it may be noted that 20.72 per cent of the Commerce students made averages above what would have been predicted, while in Physical Education 37.72 per cent made averages above the predictions. The error in prediction for Physical Education is approximately twice that for Commerce. For those students having a percentile rank at or above the rank at which a most probable average of 3.000 is made (Commerce, 60, and Physical Education, 45), 27.87 per cent of the students in Commerce failed to make at least a 3.000 average, while 38.52 per cent of the freshman in Physical Education failed to make this average.

The second attempt to test the accuracy of the predictions was to determine the percentile rank below which prospective students could be denied admission without doing an injustice to more than 10 per cent of the applicants, i.e., to determine the percentile rank

below which not more than 10 per cent of those denied admission would have been likely to make a satisfactory scholastic average of C or 3.000. In a normal probability curve, approximately 40 per cent of the cases will fall within the limits of the mean and a point 1.28 standard devitions below the mean; 1.28 times the standard error of estimate of the predicted average for the College of Liberal Arts and Sciences is equal to $1.28 \times .6692$, or .8566. Subtracting .8566 from 3.0119, the most probable average at the fifty-eighth percentile rank gives an average of 2.1553, which on the scale of predicted averages falls between the fifteenth and fourteenth percentile ranks. In other words, if it is possible to depend upon rank in class as an

TABLE VII
SUMMARY OF CASES HAVING PERCENTILE RANKS BELOW THE PERCENTILE RANK USED AS THE LOWEST LIMIT OF ADMISSION

College	Limiting Percentile Rank	Number of Cases below This Rank	Number and Per Cent of Cases making at least a 3.000 Average		Number and Per Cent of Cases failing to make at least a 3.000 Average	
			Number	Per Cent	Number	Per Cent
L. A. S.....	15	112	18	16.07	94	83.93
Commerce.....	20	143	14	9.79	129	90.21
Engineering.....	16	42	6	14.29	36	85.71
Agriculture.....	23	50	7	14.00	43	86.00
F. A. A.....	6	2	1	50.00	1	50.00
All Colleges....	15	325	50	15.38	275	84.62

accurate means of predicting freshman scholarship, it is possible to predict that if admission were denied to all students wishing to enter Liberal Arts and Sciences with a percentile rank below the fifteenth, there would be only 10 per cent of this group that would have a chance of making a 3.000 average.

Similar calculations for the remaining colleges resulted in the following percentile ranks as the limit below which applicants would not be admitted, namely: Commerce, twentieth percentile rank; Engineering, sixteenth; Agriculture, twenty-third; Fine and Applied Arts, sixth; and All Colleges combined, the fifteenth. The lower limit for the School of Physical Education could not be determined since the resultant average from the above calculation was below the most probable average for the student with a percentile rank of one.

These limits in percentile rank for each of the above colleges having been determined, an actual count was made of the cases within each college whose percentile ranks were below this "limit," in order to determine how accurate the predictions would have been for these cases. Table VII presents these data.

From Table VII it appears that instead of doing an "injustice" to only 10 per cent of the Liberal Arts and Sciences students an "injustice" would have been done to 16.07 per cent, because 16.07 per cent of those students having a percentile rank below that of 15 made at least a 3.000 average. It is of interest to note that the College of Commerce, with only 9.79 per cent making at least a 3.000 average, comes closest to the prediction, and it was this college which had the greatest amount of relationship between rank in class and freshman scholarship average as indicated by the highest coefficient of correlation.

In summarizing the data presented in this study, the writer has arrived at the following conclusions:

(1) That there is a definite positive relationship between rank in high school graduating class and freshman scholastic record. Whether this relationship is considered to be "low," "substantial," "high," "negligible," "indifferent," "markedly present" or any of the other descriptive terms applied in interpreting such relationships based on coefficients of correlation will depend to a great extent on the individual opinion of the reader.

(2) That it is possible to predict with considerable accuracy the scholastic success in the freshman year of any group of students whose percentile rank in class falls within certain limits. For example, it is possible to predict that the lowest quarter of a high school graduating class will fail scholastically in the first year in college. There will be, of course, individuals within this group who will make satisfactory scholastic records.

(3) That certain factors enter into the picture which result in "good" high school students becoming "poor" college students and "poor" high school students making freshman scholarship records above all expectations. These uncontrollable factors, or factors over which little or no control is attempted, have a great influence on the amount of relationship between rank in class and freshman scholastic records.

(4) That the rank in class, which is readily available, can be of

value to deans of colleges, personnel advisers and other administrative officers in determining which students, on the basis of their percentile rank in high school, need immediate personal attention and assistance upon entering college.

(5) That rank in class offers a means of making predictions more accurate (even in individual cases) than a guess would be, and as such it has a distinctive value.

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THE UNIQUE FUNCTIONS OF CO-OPERATIVE TESTING PROGRAMS AT THE COLLEGE LEVEL

JOHN C. FLANAGAN

IN UNDERTAKING the preparation of this paper, I have tried to answer the question, "Are there any functions which are unique to co-operative testing programs at the college level?" This problem is of more than academic or theoretical interest to me since the question as to whether or not the American Council on Education should continue to sponsor annual co-operative testing programs has been raised for serious consideration within the past year or so. It is fortunate in this connection that there are no vested interests to be protected, no one whose position depends on such continuance, nor any one who is profiting from the existing programs. We may, therefore, discuss the matter quite frankly and objectively in our attempt to arrive at the soundest solution to this aspect of the measurement and guidance problems of the colleges.

After studying the problem over an extended period of time, I can come to only one conclusion, and that is that colleges cannot safely get along without actively functioning co-operative testing programs. I venture the prediction that such co-operative testing programs, supervised by some central agency, will be universally accepted, in fact regarded as indispensable, twenty years from now. If my reasoning is in error, or, if an approach radically different from that now in use or from those contemplated is to be the finally accepted one, it will be helpful to our organization to discover this immediately so that our energies may be expended in more useful ways.

To clarify our thinking on this problem, let me enumerate my reasons for considering co-operative testing programs a necessary part of any well-planned college curriculum:

1. The trend towards focusing attention on the individual and his needs, which is termed the guidance movement, demands that we have more useful and meaningful information about the individual students with whom we work. The information that one has been able to obtain about students has been expressed too often in vague and ambiguous terms. One can no longer be satisfied with those nar-

row and provincial expressions of students' performances and behavior which are based on the small group to which they happen to belong. We must know also how the particular student compares with a broader group and also with certain carefully defined special groups in order to appraise his potentialities effectively. In other words, we must have norms, and carefully prepared ones, if test results are to be intelligently interpreted. Such norms can be obtained only with the co-operation of many colleges. But norms are not all, nor are they even the most important part, of the interpretation of test results. The tests must be well constructed to provide reliable and valid measures of individual performance. The unreliability of the traditional type of essay examination has been fairly well demonstrated to the personnel in our colleges. However, too many college people believe that the process of making reliable and valid examinations requires merely the casting of questions in objective form, or, the following of a specified set of rules in the grading of the essay examination. Many of the examinations on which college students and counselors are now trying to base their plans for the future are so lacking in meaningful comparability or accuracy of measurement that they are practically worthless. A strong central co-operative organization can keep its tests sensitive to the needs of college students, revising their content from year to year to take advantage of improved techniques of measurement and changing emphases in instruction.

2. Another important function, which can be performed only by the co-operation of many colleges, is the provision of information about the particular qualities and limitations of the total group of students in a college. Intelligent planning of the most suitable type of educational experience for the majority of students in a given college is possible only on the basis of a realistic appraisal of their characteristics. Furthermore, this information must be obtained in a regular and systematic manner if the administrator is to be kept informed as to trends and if he is to have objective information as to the effect of various changes in policy and procedure on the student body.
3. Lastly, I believe that in no other way than by supporting a strong central co-operative enterprise can the many technical problems besetting such a program be efficiently handled. It is important that the personnel officers, who are in most cases already overworked, be assisted and relieved of as much of the technical detail and arrangements as possible. A co-operative program can supply carefully worked out instructions to fit the particular testing program. It can serve as a clearinghouse for information concerning details of administration, scoring, and the use of the test results. Even more im-

portant, such an organization can co-ordinate research efforts in the co-operating institutions and can make the results of these efforts immediately available to all colleges.

So much for the reasons why a co-operative testing program appears to us to be essential. Let us now examine some of the arguments which are opposed to such a program.

1. Perhaps the most frequently mentioned argument against co-operative testing programs, or in fact against co-operation of any particular type, is that "our college is different," or "our problems are different from those of most other institutions." This "rugged individualism" in colleges is not a new phenomenon. Almost fifty years ago, when President Butler of Columbia and President Eliot of Harvard were trying to establish a co-operative agency to examine candidates for admission to a number of colleges, they were bitterly opposed on the grounds that each college was different. In fact, President Eliot was unable to get his own faculty to permit Harvard to participate in the plan until some years after it had been organized.

   When the American Council on Education first inaugurated the annual publication of its Psychological Examination for College Freshmen in the early twenties, many institutions continued to use other tests, or tests of their own devising which they felt were better suited to local conditions. Most of the people who devised these local tests found other interests as time passed, and more and more institutions have co-operated in the use of the examination of the American Council on Education.

   When the Test Committee of the American Association of Physics Teachers announced the publication of the first forms of the Co-operative Physics Tests for College Students, many physics departments co-operated in the testing program with no thought that the results would be of any real value in connection with their local testing problems. At the present time, a large number of these same institutions use the tests regularly as a part of the final examinations in their courses. This last sentence contains the key to much of the difference in opinion on the topic at the present time. Co-operative examining programs can rarely be expected to fit exactly the testing needs of any institution. However, it certainly would seem more efficient to start with a common core of testing materials and supplement these tests to make the complete testing program fit the local situation.
2. The other frequently heard objection to co-operative testing programs is that the test results are misused. It is argued that administrations freeze or warp their curriculums to fit the patterns of the

tests. It is also argued that many test-users set up the norms as standards and attempt to make all students achieve these standards. Such misuse of test results is, indeed, unfortunate. However, we can ill afford to give up our eyes because they might at some time mislead us. I cannot speak for the administrator or the personnel officer, but the student deserves to receive all the information he can be given as to how his achievements, abilities, aptitudes, interests and attitudes compare with those of the members of other defined groups. College students are close to the realities of adult life, and any misguided attempts to keep them in ignorance of their own resources would be a real disservice.

In conclusion, let us return to the question of whether we should have co-operative testing programs at the college level. It appears obvious from the foregoing remarks that many of the possible benefits to be derived from such a testing program can be derived only if the program is a truly co-operative one. Unless the college officers participate actively in the planning and direction of the program, it tends to become static, and divorced from real needs and objectives. In an effort to discover to what extent a truly vital co-operative testing program can be achieved at the college sophomore level, the American Council on Education has appointed an Advisory Committee of representatives from various colleges to work with the newly appointed head of the Advisory Service in the planning and direction of college testing programs. Several new features are contemplated for this year's Sophomore Testing Program which, it is hoped, will provide a distinctly valuable service to the co-operating colleges. Probably the most important of these is the plan for increasing student use of the results. This is to be accomplished by shifting the schedule so that the final returns will be available for the students while the tests are fresh in their minds, and by providing a special profile chart, on which the individual's results on the various achievement and interest tests may be recorded in comparable terms. Perhaps the other most important new feature is the revision of the Co-operative Contemporary Affairs Text to provide separate measures of knowledge of current events in six fields: national and international political affairs, social and economic affairs, science and medicine, literature, fine arts and amusements. It is believed that relative knowledge of current happenings in these fields will reveal the relative interest in them, because interests determine to a large extent which events are read about and remembered. The report of the

testing program will feature an analysis of the relation of these "functioning interest" scores to achievement in the various fields, to types of colleges attended, to other measures of interest, etc.

The task confronting those responsible for providing appropriate educational experiences for our college youth is so great that these individuals should be given all the assistance possible in appraising the potentialities of the individual student and the effectiveness of various instructional procedures. It is my belief that such information as may be obtained from objective tests cannot fail to be valuable to personnel workers in our colleges. It also seems clear that co-operative college testing programs afford an efficient means of obtaining many of the types of information needed.

—*Volume 15, Number 1*

THE USE OF A SIMPLIFIED METHOD OF COLLEGE ABILITY EVALUATION BASED UPON SEMI-OBJECTIVE RATINGS

DAVID G. RYANS

FEW PROBLEMS have concerned the educational psychologist since his appearance on the academic scene more than that which has to do with the prediction of scholastic success. Aimed ultimately (though seldom achieving the purpose) at student selection, countless investigations have been directed at the determination of indices which might be significantly indicative of later-to-be-demonstrated ability in the school situation. The findings have been relatively consistent in their agreement that of the many predictive measures employed, two, previous scholastic performance and "intelligence" test results, are of definite value in revealing probable limits of individual achievement. College ability ratings based upon these measures have met with considerable success in application, especially as regards the prophecy of failure.

Unfortunately it is not always possible to secure the necessary information for prognosis before a student's matriculation at the college or university level. Selection of student personnel is made difficult when the transcript of secondary school credits antedates a registrant's appearance on the campus by a scant few weeks and when reliable test scores of aptitude are not available until the muster for examination during "freshmen's week" has been accomplished. True, some institutions have combined their resources to sponsor testing programs for high school seniors throughout an area during the last months before graduation, and have thus accumulated useful data. But this expedient has not been followed (often as a matter of necessity) by the average collegiate institution. Until such practices can become more widespread, or simpler and less expensive ones substituted, many colleges will have to forego pre-entrance selection of any sort and will continue to suffer the resultant maladjustment and lack of economy which accompany frequent failure, withdrawal and dismissal.

It is our purpose to report here a plan, simple in operation, which served satisfactorily in one institution to enable the approximate pre-

diction of marks three to nine months in advance of registration. No novel device was employed. The method, admittedly poorly controlled, consisted merely of the preparation of semi-objective ratings based upon replies to a brief inquiry sent to high school principals and personnel officers. The "typical" high school mark (with reference to a five-point scale) and any aptitude test results available were requested for each applicant. Obviously, extensive variance in marking and in testing had to be recognized, but the results would indicate that these factors, though uncorrected, did not constitute a major hindrance.

A copy of the form letter employed at William Woods College for securing the desired information is presented below. This letter is mailed to the applicant's high school principal immediately upon receipt of her application for admission to the institution.

William Woods College
Fulton, Missouri

Dear Mr. ————:

Miss ———— ———— has applied for admission to William Woods College. In that we are desirous of understanding our prospective students as perfectly as possible before passing upon their applications, we would be grateful if you would see that the answers to the questions listed below are provided. It is our request that this be accomplished by the counselor who has been assigned to this student or by yourself, since we are anxious that this picture be frank, accurate and impartial.

After this sheet has been filled out, please return it to us in the enclosed envelope. As we are holding the young lady's application until we hear from you, we should like to have the information within the next week if possible.

We sincerely appreciate your co-operation.

Very truly yours,

_____

(Signature)

Is the applicant *typically* an E, S, M, I or F student? (Check one.)

E indicates "excellent" (upper 5 per cent of class) E ——

S " "superior" S ——

M " "medium" or "average" (middle 50 per cent of class) M ——

I " "inferior" or "below average" I ——

F " "failure" F ——

Do you have aptitude or psychological test records for the applicant?

If so, ——————— ——— ——————— ———
(Name of test) (Score) (Centile Rank) (IQ)

To what extent is the applicant:	Usually	Moderately	Seldom
Honest?	———	———	———
Dependable?	———	———	———
Hyper-critical and frequently dissatisfied?	———	———	———
Liked by others?	———	———	———
Capable of taking advice?	———	———	———
Indifferent toward school work?	———	———	———

What do you consider the applicant's chief weakness?

What is your frank opinion of the applicant's desirability as a member of the William Woods College student body?

After this form has been completed and returned, subjective evaluation of college aptitude, based upon the first two items of the inquiry, is attempted, and the prospective student is assigned a rating. These ratings are very broad, falling into four groups (A, B, C and D). A rating of "A" is used to indicate that the applicant seems to be an excellent college risk and that she should do well in her studies. A "B" rating is assigned a student who appears to be an "average to good risk in college" and who "should do satisfactory work in most of her courses." A "C" rating signifies "poor college risk" and prophesies that the individual "will have difficulty with her courses." "D" rating is employed for applicants who are believed to be non-collegiate material and who, it is believed, probably will not succeed.

Though essentially subjective, the ratings have their foundations in actually measured performances and their justification in the observations of administrators and personnel officers that success in high school is likely to be followed by success (of a lesser degree) in college, and that aptitude test scores in the lower fifth of a high school senior distribution are not conducive to satisfactory and su-

perior work in college. Conversely, combinations made up of high grades in high school and high aptitude test scores are indicative of probable college success.

VALIDITY OF THE RATINGS

College ability ratings were assigned applicants for admission to William Woods College between the months of October 1937 and July 1938, following the method outlined above. The students began their college courses in September 1938. At the end of the first semester in attendance assigned course marks were studied in relation to the evaluations prepared earlier. Although aptitude test scores in high school were not universally available and although public and private secondary schools of very different types and with diverse marking plans were represented, prediction of definite usefulness was accomplished. Tables I and II reveal the numbers and percentages of credit hours of the several marks earned by the students constituting the four evaluation groups. The results are clear-cut.

TABLE I

AVERAGE NUMBER OF HOURS OF E, S, M, I AND F GRADES EARNED DURING THE FIRST SEMESTER OF THE ACADEMIC YEAR BY STUDENTS FOR WHOM COLLEGE ABILITY EVALUATIONS HAD BEEN MADE PRIOR TO COLLEGE MATRICULATION

College Ability Evaluation	Number of Students	Aberage Number of Hours of:					Total
		E	S	M	I	F	
A	13	4.35	7.50	3.69	0.00	0.00	15.54
B	88	0.54	4.45	7.56	2.30	0.34	15.19
C	35	0.11	1.80	7.03	4.67	0.86	14.47
D	8	0.00	0.62*	1.56	7.88	5.25	15.31

E indicates highest mark in course
S indicates superior mark in course
M indicates medium or average mark
I indicates inferior or below-average mark
F indicates failure in course

* One student with special ability in the graphic arts attained an "S" mark in a five-hour course in Art.

Table III shows the mean honor-point averages earnd by students in the evaluation groups.

Still further study of the college ability ratings obtained in the manner described was undertaken through the calculation of mean

TABLE II

AVERAGE PERCENTAGE OF HOURS OF E, S, M, I AND F GRADES EARNED DURING THE FIRST SEMESTER OF THE ACADEMIC YEAR BY STUDENTS FOR WHOM COLLEGE ABILITY EVALUATIONS HAD BEEN MADE PRIOR TO COLLEGE MATRICULATION

College Ability Evaluation	Number of Students	Average Number of Hours of:					Total
		E	S	M	I	F	
A	13	27.97	48.23	23.73	00.00	00.00	99.93
B	88	3.55	29.28	49.25	15.13	2.24	99.45
C	35	0.76	12.54	48.58	32.07	6.04	99.99
D	8	0.00	4.05*	10.19	51.46	34.28	99.98
Total	144	8.26	23.74	32.80	24.53	10.64	99.97

* One student with special ability in the graphic arts attained an "S" mark in a five-hour course in Art.

TABLE III

AVERAGE HONOR-POINT RATIOS* FOR THE FIRST SEMESTER OF THE ACADEMIC YEAR EARNED BY STUDENTS FOR WHOM COLLEGE ABILITY EVALUATIONS HAD BEEN MADE PRIOR TO COLLEGE MATRICULATION

College Ability Evaluation	Number in Group	Average Honor-Point Ratio
A	13	3.04
B	88	2.16
C	35	1.69
D	8	0.84

* 4 points allotted for each hour of "E" earned
3 points allotted for each hour of "S" earned
2 points allotted for each hour of "M" earned
1 point allotted for each hour of "I" earned
0 points allotted for hours of "F"

TABLE IV

MEAN SQUARE CONTINGENCY COEFFICIENTS* INDICATING STATISTICAL RELATIONSHIPS EXISTING BETWEEN THE VARIABLES

	Honor-Point Ratio	Typical "Intelligence"	Study Habits
College ability evaluation....	0.57	0.49	0.39
Honor-point ratio.....		0.61	0.39
Typical "intelligence".....			0.44

* Employing a 4 × 4 classification. With such grouping, a mean square contingency coefficient cannot exceed 0.866.

square contingency coefficients for the ratings, and such other variables as "intelligence,"[1] honor-point average, and "study habit" indices.[2] Statistical relationships with respect to these measures are given in Table IV.

While the best single indicator of college success appears to be the "intelligence" estimate obtained during the first week of college life, semi-objective ratings of college ability would seem to be very nearly as significant. Responses to a study habits questionnaire, administered three weeks after the beginning of the semester, were not of value in predicting term marks.

CONCLUSIONS

Although the prediction enabled by the pursuance of the method of college ability evaluation outlined is far from perfect, it is felt that the techniques have given evidence of their usefulness and that the ease with which they can be applied contributes to their worth. Applicants for admission to William Woods College are now being selected with the aid of this device. In fairness to the prospective student, however, admission is still not refused on the basis of this evaluation alone. If the applicant falls into the "D" evaluation group, additional inquiries are made of the high school principal and adviser. A "to-date" transcript of credits is also requested to ascertain the corrrectness of the evaluation and to obviate the occurrence of error through premature judgment.

It is the writer's contention that college ability may be predicted roughly in the absence of elaborate testing programs and expensive personnel services.

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[1] A typical index of "intelligence," based upon standard scores translated from raw scores on the Army Alpha Examination and the Otis Test, was employed. These tests are administered upon entrance to William Woods College each year.

[2] Obtained through the use of a questionnaire, the *Wrenn Study Habit Inventory*.

STUDENT LOSSES IN A LIBERAL ARTS COLLEGE

FRANKLIN I. SHEEDER

THE NATURE and extent of student losses constitute one measure of the efficiency of any educational institution. Assuming that some care has been exercised in the admission of students to the college or university, excessive losses may well be a reflection upon the adequacy of certain aspects of the eductaional program. In any event, when the individual student is regarded as the center of the educational process, his ultimate welfare becomes a matter of vital concern; hence his removal from the institution to which he has been admitted should presumably occur only for good and sufficient cause, and so far as possible only when the best interests of the individual and the institution may be served. For those who, as administrators or classroom teachers, maintain a counseling relationship with their students, the problem of student losses is much more than a purely academic matter. The analysis and interpretation of such losses should accordingly comprise a part of the continuous evaluation program of every educational institution. It is from this viewpoint that the study reported here has been made.

The extent to which student mortality occurs in our institutions of higher learning is surprisingly large. A few years ago, Walters[1] reported that "only about fifty per cent of those who enter the colleges and universities complete their courses." In an unpublished dissertation at Stanford University, F. C. Wilcox[2] states that in a study of student transfers and drop-outs in a large group of four-year colleges, less than one-third of the original enrolment in more than half of the colleges studied remained for graduation.

One of the most ambitious studies of student mortality thus far undertaken was recently reported by the U. S. Office of Education.[3] Data were collected on more than 15,000 students who were originally registered in 1931-32 in 25 universities scattered throughout the United States. For the universities as a whole the average gross

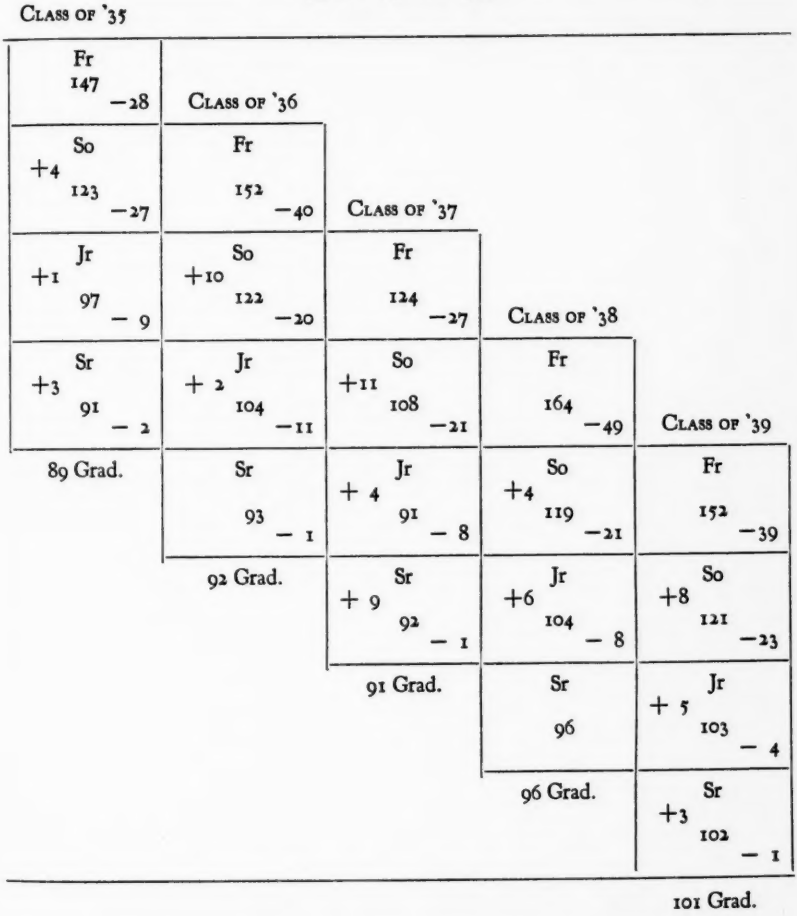
[1] J. E. Walters, *Individualizing Education,* John Wiley and Sons, New York, 1935, pp. 3-4.

[2] F. C. Wilcox, *Comparative Trends in the Development of Universities and Colleges,* 1936, Leland Stanford University Library.

[3] J. H. McNeely, *College Student Mortality,* Bulletin 1937, No. 11, U. S. Office of Education, Washington, D.C., 1938.

mortality was found to be 62.1 per cent, and the average net mortality 45.2 per cent. In other words, for every 100 students entering all the universities approximately 62 left the institutions, some

CHART SHOWING ENROLMENTS AND WITHDRAWALS OF STUDENTS IN FIVE CLASSES IN URSINUS COLLEGE FROM SEPTEMBER 1931 TO JUNE 1939



of them later returning to complete their work, and 45 were permanently lost to higher education.

The following chart shows student enrolment and withdrawal figures for five classes in Ursinus College from September 1931 to June 1939. Each block represents one year. The figure in the cen-

ter of each block indicates the total enrolment at the opening of college in September in that particular class. The figure in the upper left corner of each block indicates the new students admitted to that class. The figure in the lower right corner indicates the number of drop-outs in that class from September to September. For example, 147 freshmen were admitted in September 1931. Of this number 28 withdrew or were discontinued before the following September. Four new students joined this class in the sophomore year, making a net total of 123 for that year. Of this number 27 withdrew or were discontinued before the following September. One new student joined this group in the junior year, making a net total of 97 students enrolled in that year. Of this number nine with-

TABLE I
NUMBER AND PERCENTAGE OF STUDENTS ENTERING AS FRESHMEN WHO WERE GRADUATED IN NORMAL FOUR-YEAR PERIOD

Class	Number Entering as Freshmen	Number of Original Group Graduated	Percentage of Total
1935.....	147	83	56.5
1936.....	152	81	53.3
1937	124	75	60.5
1938.....	164	88	53.7
1939	152	93	61.2
Average.....	148	85	57.0

drew or were discontinued before the following September. Three new students joined this group in the Senior year, making a net total of 91 students who were enrolled as seniors; 89 of these students were actually graduated. However, when the students who joined the group after the freshman year are eliminated, it will be observed that only 83, or 57 per cent, of the original entering group of 147 were graduated in the normal four-year period. Table I shows the number and percentage of the original entering groups in each of five classes who were graduated in the normal four-year period.

Thus it will be seen that for the five classes studied the percentage of the original entering group who were graduated in the normal four-year period ranged from a low of 53.3 to a high of 61.2, with an average of 57.0. In other words, approximately six out of every ten students who enter as Freshmen can be expected to complete their college course in the regular four-year period. But what happens to the other 43 per cent?

Table II, which is compiled from the chart previously referred to, shows the losses by years. Since the percentages have been figured on net totals, which include new students who joined the group in the respective years, they are not entirely accurate. However, they are close enough for comparative purposes, and indicate the real trend. It will be observed that the greatest losses occur in the freshman year. Approximately one-half of the total number of student losses in any class group occur during the first year of college. The second year claims a major portion of the remaining losses in any class group. After the third year the losses are negligible. These findings are substantially the same as those reported by other investigators.

TABLE II
STUDENT LOSSES BY YEARS

Class	During Fr. Yr.	P. C. of Total	During So. Yr.	P. C. of Total	During Jr. Yr.	P. C. of Total	During Sr. Yr.	P. C. of Total
1935....	28	19.0	27	22.0	9	9.2	2	.02
1936....	40	26.3	20	16.4	11	10.5	1	.01
1937....	27	21.8	21	19.4	8	8.8	1	.01
1938....	49	29.9	21	17.6	8	7.7	0	.00
1939....	39	25.7	23	19.0	4	3.9	1	.01
Average....	37	24.5	22	18.9	8	8.0	1	.01

When the new students who entered the five classes after the freshman year are added to the original freshman groups, the number of students involved totals 819. Of this number 330, or 40.3 per cent, failed to graduate with their respective classes. Table III indicates what happened to these students. It will be seen that 112, or 33.9 per cent, left college because of scholastic difficulties. This means that they were either discontinued by faculty action, or because of dissatisfaction with their scholastic work they withdraw voluntarily. It is not always possible clearly to differentiate between various causes responsible for the withdrawal of students from college. For example, it sometimes happens that financial, scholastic, health, and personal adjustment difficulties are so subtly interwoven as to make it practically impossible to decide which is the major factor operating in a particular case. However, so far as possible, every student who voluntarily withdraws from Ursinus College is personally interviewed by the registrar or his assistant before leaving. Moreover, students who withdraw during the summer months are invari-

ably written to and a statement obtained from them explaining their reasons for withdrawing from the institution. Thus it is reasonable to conclude that so far as the responses of the students represent frank and honest statements, a fairly accurate accounting has been obtained.

Approximately one-third of the student losses experienced were either directly or indirectly associated with scholastic difficulties. Financial difficulties accounted for one-fifth of the losses. The third most important causal factor was found to be connected with the matter of vocational aims and objectives: 17.3 per cent of the students in the group studied left college after one, two, or three years

TABLE III
REASONS FOR STUDENT LOSSES

	Men	Women	Total	Per Cent of Grand Total
Scholastic Difficulties	90	22	112	33.9
Financial Difficulties	48	19	67	20.3
Completed pre-professional training, or transferred to colleges offering training for vocational needs	34	23	57	17.3
Illness and death	21	14	35	10.6
Personal maladjustment	11	10	21	6.3
Unknown causes	7	11	18	5.5
Marriage	4	12	16	4.9
Disciplinary causes	4	0	4	1.2
Totals	219	111	330	100.0

because they had either completed enough college work to enable them to gain admission to the professional school of their choice—medicine, dentistry, veterinary medicine and the like—or else they concluded after some experience in a college of liberal arts that their vocational needs could be better served in another type of institution.

It is of interest to note that 60 men and 52 women, or a total of 112 students, who left Ursinus College transferred to other institutions of higher learning. Some of these institutions were other liberal arts colleges, some were state teachers colleges, some were technical schools, and some were professional schools. Thus it can be said that 34 per cent, or one-third of the total group, were not actually lost to higher education. It should be noted further that 21 students who left Ursinus College returned at a later date. Of this number 8 were ultimately graduated, 6 are still in college, and 7 withdrew again prior to graduation.

It is not assumed here that all students who enter college should be expected to graduate. Within reasonable limits, student losses are a normal part of the educational process. It is conceivable that in some instances student withdrawals are to be encouraged. But from the standpoint of good counseling procedure, it is proper to inquire into the nature of student losses. If scholastic difficulties are the result of defects in the students' preparation, the school and the home should be concerned about the matter and make whatever adjustments are necessary. In the study *From School to College,*[4] the following statement is made:

> Our study of what happens to school boys as they enter college leads to the conclusion that much more than is being done to prepare for this transition could and should be done. The number of students arriving at college who showed a pitiful ignorance of any intelligent study plans or methods was surprisingly large.

Likewise, the college has a responsibility in the matter. The fact that a college accepts a student places upon it an obligation which it cannot lightly ignore. That many colleges are more and more attempting to individualize the educational process is a wholesome sign. In the study just referred to, Dr. Hale reports (pp. 307-10) on one such plan now in operation in Carleton College. He concludes this section as follows:

> It is necessary merely to point out that this philosophy of individualized education implies a responsibility to make every effort to help students discover their abilities and to provide training that will be in keeping with their individual needs. Starting before the student enters college, the plan seeks to understand him as an individual, keeping adequate records of his progress, so that step by step he can be helped to his fullest development. Such a program does not wait until the student is in dire straits, but helps him to overcome his weaknesses before they defeat him.

The fact that financial difficulties play so large a part in student losses suggests the advisability of having students and parents realistically face this problem before attempting to embark upon an educational program that is beyond the family means. Colleges also have a responsibility in this matter. Good counseling procedure requires that college authorities should not encourage students to enter a par-

[4] Lincoln B. Hale, *et al., From School to College,* Yale University Press, New Haven, Conn., 1939, p. 317.

ticular institution unless the matter of financing a college education has been intelligently and thoroughly considered.

The findings of this study do not support the contention of F. C. Wilcox,[5] to the effect that the liberal arts colleges are rapidly becoming in effect junior colleges. That is, because of the large number of students transferring at the end of the first or second year to universities, or other technical or professional schools, the liberal arts college is for many offering what amounts to a terminal education. While it is true that nearly one-fifth of the students who in this study were lost to Ursinus College did transfer to other institutions because they felt their vocational needs could be better served by such transfer, the actual number of students involved was not large. However, liberal arts college administrators would do well to consider the problem of what they might do, without violating their educational objectives, to adapt their curriculum offerings to the vocational needs of students in these times.

The continuous evaluation of student losses is an educational necessity which can conceivably serve as a useful check upon administrative stagnation and institutional shortcomings.

—Volume 15, Number 1

[5] *Op. cit.*

A UNIVERSITY TAKES INVENTORY

MAURICE CURTIS LANGHORNE

EMORY UNIVERSITY has taken to heart the Socratic admonition, "Know thyself," but has translated that command into "Know what has happened to your students." The business world has long since developed expert methods of taking inventory, but higher education has been tardy in validating its labors, in ascertaining what has really happened to students who have entered its portals with marked individual differences and talents. Universities usually assume that their inferior students fall by the wayside on the road to the degree and have been confident that their graduates are far wiser than their freshmen. Such a document as the Carnegie Foundation Study in Pennsylvania is embarrassingly disconcerting.

This study will not duplicate the Carnegie study; instead it will apply the methods of accounting to a university's accomplishments. An inventory in business results in an accurate statement of the possessions of a company but does not offer solutions for any weaknesses so discovered. This study will be an inventory of a small university in the deep South; it will reveal what has happened to its students; it will offer no theories concerning how to improve the educational method and technique.

A turning point in the history of Emory University is used as the starting point for a survey which follows the academic workings of the university for a period of approximately fifteen years. The group studied was composed of the entering classes from the fall of 1919 through the fall of 1934 and those who graduated from those classes from 1923 through August 1938. A study of student enrolments and the academic successes and failures in the undergraduate, professional and graduate divisions gives a graphic picture of the holding power of the institution and furnishes information which is needed for a complete inventory.

Table I gives a summary of enrolment figures together with the number of degrees granted by each division of the university. The summer school is considered an integral part of the school year, but since there are a number of transient students in attendance each summer a separate column *Summer* (*only*) is included to designate them. If all students enrolled are considered, there is a total enrol-

TABLE I
ENROLMENTS IN AND DEGREES GRANTED BY COLLEGES AND PROFESSIONAL SCHOOLS OVER A FIFTEEN-YEAR PERIOD

Divisions		Enrolments	Degrees	Per Cent Receiving Degrees
College		4156	1472	35.4
Business Administration		813	201	24.4
Graduate School				
Regular	786		500	63.6
Summer	535		67	12.7
Sum. & Ext.	126		65	51.5
Extension	33		2	6.0
Reg. & Ext.	18		9	50.0
Total Graduate		1498	643	42.9
Medical School		1032	791	76.6
Law School				
Regular	460		261	56.7
Summer§	47			
Total Law		507		
Theology School				
Regular*	381		190	49.8
Special	249			
Total Theology		630		
Summer (only)†		2579	6	.02
Extension‡		691	—	
Sum. & Ext.		408	34	8.0
Ext. & Reg.		39	16	41.0
Ext., Sum., & Reg.		13	9	69.2
Library School		308	291	94.4
University Total		12674	3912	
Total (less duplicates)		10937	3705	33.8
Total (less duplicates and Sum., Ext., & Special Students)		6199	3110	50.1

§ These students attended the Law School for summer work only. No one in the group received a degree. Most of them attended for one summer. It was thought unwise to include this group in figuring the percentage of degrees awarded by the Law School.

* Regular theology students must hold the bachelor's degree to be eligible for the theology degree. Students admitted in theology without the degree are classed as special students.

† Summer (only) refers to students taking work only in the summer term.

‡ The Extension Division was discontinued in 1933.

ment of 10,937, of whom 3705 received degrees. If, however, we consider only those students in attendance during the regular session, there is a total of 6199, with 3110 degrees.

Table II presents a synopsis of the length of time students remain in the University and the percentage dropping out each quarter. The figures are presented in terms of the percentage of the total enrolment in each division as compared with the length of time the individual remained in attendance. For instance, in Part I, 3.6 per cent of all of the students enrolled in the College dropped out before

TABLE II
DURATION OF ENROLMENT IN SEVEN DIVISIONS
Part I

Time in Attendance	College	Business Administration	Theology		Graduate	Law‡
			Reg.	Spec.†		
	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
*o (quarters)	3.6	4.6				
1	6.6	9.3	7.6	41.8	13.1	9.7
2	5.4	6.9	5.3	13.8	5.6	6.5
3	13.9	16.5	6.8	8.8	45.9	12.9
4	6.4	6.5	5.3	2.0	35.4§	4.0
5	3.8	6.4	3.9	4.4		4.8
6	13.1	11.2	5.8	5.6		6.5
7	6.2	3.4	6.8	3.6		2.4
8	3.4	3.0	24.7	7.6		.8
9	8.6	4.8	24.1	5.6		37.9
10	4.3	2.6	9.7	6.8 (over)		(over) 14.5
11	3.5	2.1				
12	12.2	13.8				
12 (over)	9.0	8.9				

Time in Attendance	Law	Medicine	Library School
1 (years)	30.7	20.5	5.5 (less than one year)
2	20.5	16.4‖	93.5 (one year)
3	46.4	1.8	1.0 (more than one year)
4	12.5	58.7	
4 (over)		2.6	

Part II

Per Cent Failing to Return After	College	Business Administration	Theology		Graduate	Law
			Reg.	Spec.		
1 (year)	29.5	37.3	19.7	64.4	35.4	29.7¶
2	23.3	24.1	15.0	12.0		13.7
3	18.2	11.2				

† Refer to Table I notes.

‡ The Law School ran on the semester system until 1931, when the quarter system was inaugurated. This part covers, then, the period from the fall of 1931. The enrolment before that time is given in terms of years of enrolment.

* o quarters is used to indicate those failing to finish their first quarter.

§ Students spending four or more quarters are grouped here. The same procedure is used in connection with the figures in the Law and Theology Schools where those who stay longer than 9 quarters are grouped in one division marked (*over*).

‖ This figure included those who enter as juniors to complete their final two years of medicine at Emory.

¶ This figure includes those students who entered under the quarter system.

the end of their first quarter. It should be noted that the first quarter designates the first quarter of enrolment at Emory. This may refer to students who enter with advanced standing. The Schools of Law and Theology require normally nine quarters to complete requirement for their degrees. For those students requiring more than normal time for completing their degree work a separate entry, designated (*over*), is made. The same entry is made in connection with the tabulations under the other divisions to indicate those who remained longer than the normally required time. The percentage figures for the School of Medicine, the Library School and part of the

TABLE III
NUMBER OF QUARTERS PRE-PROFESSIONAL PREPARATION AT EMORY BEFORE ENTERING EMORY'S PROFESSIONAL SCHOOLS

Quarters	Medicine	Law School	Theology
1	26	12	14
2	4	4	6
3	42	14	29
4	19	2	12
5	13	6	8
6	121	33	14
7	57	27	9
8	33	16	11
9	146	67	21
10	44	34	16
11	21	18	8
12	57	31	21
12 (over)	45	20	11
Totals	628	284	180

figures for the School of Law are given in terms of years; those for other divisions are given in terms of quarters. The fact that a student remained for a number of quarters is no indication that his work for the period of enrolment was satisfactory. In Table II, Part II, are to be found figures relating to the number of students dropping out each year. For example, 29.5 per cent of those students entering the College fail to return for their second year.

Many students who leave the College Division enter the professional schools on the local campus. Table III shows the amount of time spent in the College or Business Administration Schools in preparation for entrance into the local professional schools. There is no satisfactory way of checking on students who go elsewhere. Table III is in terms of the number of students, and not in percentages. For in-

stance, 26 students spent one quarter in pre-professional work before entering medicine.

GRADES AND GRADUATION

The College and the School of Business Administration grade on the basis of A, B, C, D, E, F. Quality points per course are granted as follows: A-6, B-4, C-2, D, E, F-0.

TABLE IV
AVERAGE NUMBER OF QUALITY POINTS PER COURSE MADE BY STUDENTS IN THE VARIOUS DIVISIONS

Average Quality Points per Course	College		Bus. Admin.		Summer		Extension	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
0- .99.....	1107	26.6	342	42.1	427	16.5	189	27.4
1-1.99.....	842	20.3	206	25.3	258	10.0	24	3.5
2-2.99.....	1145	27.6	160	19.7	727	28.2	183	26.5
3-3.99.....	561	13.5	78	9.6	464	18.0	77	11.1
4-4.99.....	330	7.9	24	2.9	502	19.5	155	22.4
5-5.99.....	158	3.8	3	.4	123	4.8	23	3.3
6.....	13	.3	—	—	78	3.0	40	5.8
Totals.....	4156		813		2579		691	

Table IV purposes to give a check on the average quality points per course made by undergraduate students. The quality points per course made by each individual were averaged, after any deductions of points for absences, and the averages were grouped into seven divisions. The first two divisions represent below average rating, since a 2 quality point average is necessary for graduation from the Senior College. The last division is used to designate that rare case of a perfect record. The number column indicates the number of students in the division making the average number of points per course from 0-6. The per cent columns indicate the per cent in the division who made a certain number of quality points per course. The students in the College made higher average quality points per course than the students in Business Administration. Grades in the summer and in the formerly existing Extension Division were higher than in the regular divisions and in the regular sessions.

Using the same type of quality point analysis in Table V as in Table IV, a comparison is made between the average quality points per course and the length of time the student remains in the College

or the School of Business Administration. At the end of their first year 61.2 per cent of those students with 0-.99 average quality points per course failed to continue at Emory. There does seem to be a positive relationship between the variables studied in Table V. Those students in the lowest division of quality points average drop out rather soon. In the average and slightly above average ranges there is a manifest tendency to remain in the University for longer periods

TABLE V

A COMPARISON OF THE LENGTH OF TIME STUDENTS REMAIN IN SCHOOL AS RELATED TO THEIR AVERAGE QUALITY POINTS PER COURSE

Average Quality Points per Course	College					Business Administration				
	Years					Years				
	1	2	3	4	over 4	1	2	3	4	over 4
0- .99.....	61.2	24.7	10.4	3.0	.7	60.2	27.8	7.5	3.3	1.2
1-1.99.....	22.1	24.9	20.6	15.2	17.2	27.7	28.6	14.6	9.7	19.4
2-2.99.....	17.6	21.6	21.8	26.2	12.8	17.6	16.3	14.9	39.3	11.9
3-3.99.....	13.0	24.7	21.5	33.3	7.5	11.5	15.4	14.2	46.1	12.8
4-4.99.....	18.1	22.2	21.8	33.3	4.6	12.5	8.3	—	79.2	—
5-5.99.....	13.3	14.5	17.1	45.6	9.5	—	66.7	—	33.3	—
6.....	61.5	7.7	—	15.4	15.4	—	—	—	—	—

of time. There are so few instances of the 6 average quality points per course that there is no possible valid comparison.

THE TESTING PROGRAM

The University began a comprehensive college testing program in the fall of 1921. All entering freshmen were required to take a number of standardized tests. This testing program has been continued until now it is possible to make a broad survey of test results and their possible usages over a period of years. The most significant test seems to be the so-called psychological examination. The Thurstone Test IV was used from 1921-1924. The Psychological Examination prepared by the American Council on Education has been used since that time. Because the testing program has used two different tests it was thought advisable to run a correlation between the Thurstone and the American Council Test. A correlation of $+.6936 \pm .0289$ was found between the two tests when 147 freshmen were used as subjects. The high correlation of the two tests justifies the combination of their results in predicting academic success. These tests are given only to the entering freshmen in the fall term; there-

fore, there are no available test scores for those entering as transfers or at any other times.

Table VI was computed on the basis of the average percentile ratings of those students who were in the College or the School of Business Administration. The percentiles are on the Thurstone Test

TABLE VI
TEST RESULTS AS RELATED TO LENGTH OF TIME ENROLLED

Quarters	0	1	2	3	4	5	6	7	8	9	10	11	12	Over 12
Average percentile for College	30.9	32.4	42.4	45.9	43.4	39.7	49.2	52.3	51.3	58.4	49.6	56.6	63.6	48.8
Average percentile for Bus. Adm.....	23.5	20.5	42.0	42.1	37.3	47.0	45.0	37.5	43.7	46.5	40.1	56.9	60.5	51.1

through 1924 and on the American Council Test through the entering class of the fall term of 1934. An examination of Table VI indicates that the average percentile of all those individuals who remained at Emory less than one quarter was 30.9 in the College and 23.5 in Business Administration. There is a fairly consistent trend shown in the table between the length of time enrolled and the average percentile. The trend is especially observable at the end

TABLE VII
AVERAGE PERCENTILES ON PSYCHOLOGICAL TEST FOR STUDENTS ADMITTED AND STUDENTS GRADUATED FROM SIX DIVISIONS

School	College	Bus. Admin.	Medicine	Law	Theology	Graduate School
Average Percentile.....	50.4	44.7	52.1	59.3	48.8	66.4

Degree	AB	BS	BPh*	BBA†	MD	LLD(JD)	BD	MA	MS
Average Percentile	65.2	58.4	57.7	59.9	55.0	61.2	48.5	65.8	69.8

* BPh refers to the degree of Bachelor of Philosophy.
† BBA refers to the degree of Bachelor of Business Administration.

of the third, sixth, ninth and twelfth quarters. The average percentiles in the School of Business Administration are below those of the College at practically all periods.

Table VII shows the average percentile of all individuals who entered each of the divisions of the University and the average percentile of those receiving the various degrees. It shows, for instance, that all students entering the College had an average percentile of 50.4. Business Administration students had an average percentile of

44.7. The average percentile of those individuals who received the A.B. degree was 65.2. It will be noticed that those receiving degrees had higher average percentiles than those who did not.

In Table VIII a comparison is made between the average number of quality points per course and the average percentile scores of

TABLE VIII
RELATION BETWEEN QUALITY POINTS AND TEST PERCENTILES FOR TWO DIVISIONS

Average quality points	College 0-.99	1-1.99	2-2.99	3-3.99	4-4.99	5-5.99	6	Phi Beta Kappa
Average Percentile.	33.4	43.8	54.3	64.1	73.1	82.9	94.1	84.9
	Business Administration							
Average Percentile.	31.8	44.3	55.5	66.4	75.5	—	—	—

those making the quality points. Those students whose quality points per course average from 0-.99 had an average percentile rating of 33.4 in the College and 31.8 in the School of Business Administration, etc. A rather significant relationship appears in this table. As the quality point ratio per course increased there was an accompany-

TABLE IX
AVERAGE PERCENTILE SCORES OF STUDENTS RECEIVING DEGREES ACCORDING TO DEPARTMENT OF SPECIALIZATION FROM 1929-1938

Department	Undergraduate			Graduate		
	Average Percentile	Number	Range	Average Percentile	Number	Range
Bible	45.0	5	11-83			
Biology	53.5	72	5-99	54.0	10	5-97
Chemistry	71.1	72	18-99	73.1	25	34-98
Economics	59.6	29	3-96	65.7	3	31-98
Education	45.0	2	15-75	50.0	1	
Engineering	57.3	16	15-92	98.0	2	97-98
English	73.6	47	6-99	78.0	7	15-95
Fine Arts	52.3	4	38-69	74.5	2	55-94
German	89.0	2	79-99	79.0	1	
Greek	67.5	4	26-94			
History	68.9	38	4-99	64.4	7	13-99
Mathematics	73.9	8	35-99	72.7	3	32-94
Philosophy	55.3	15	1-99	77.0	1	
Physics	79.7	3	69-99			
Public Affairs	77.1	13	46-98	79.0	1	
Pol. Science	57.4	42	2-95			
Psychology	67.6	11	19-95	78.0	2	62-94
Romance Lang.	71.9	18	8-99	84.0	5	75-99
Sociology	45.6	12	10-99	12.0	2	4-19
Pre-Med. Science	61.8	59	12-99			
Bus. Admin.	58.5	69	6-98			

ing increase in the average percentile. This correspondence, in addition to a positive correlation of $+.5292 \pm .0103$, found between the College grades and the test scores of 2193 students, indicates a positive predictive trend in the score and academic success.

The results in Table IX are based on the period of time from 1929-1938. This table gives a survey of the students according to their department of specialization. It gives, by departments, the average and range of percentile scores of those students who received degrees in the undergraduate and graduate schools. Many more degrees were awarded during this time. The degrees recorded in Table IX represent only those students who were in attendance at the institution from their freshman year on. The others who received degrees came to the institution after their first quarter as freshmen. This table could not be based on an earlier period of time because there were no clearly defined departmental specializations up to this time. The period of time represents the interval after the division of the University into Junior and Senior College Divisions. The table indicates that the Department of Bible awarded degrees to 5 students whose average percentile was 45 and whose percentiles ranged from 11-83.

TABLE X
COMPARISON OF PERCENTILE RATINGS WITH AVERAGE QUALITY POINTS PER COURSE AND DEGREE

Percentiles	0-.99	1-1.99	2-2.99	3-3.99	4-4.99	5-5.99	6	AB	BS	BPh	BBA	Phi Beta Kappa
0- 9	23.8	11.8	5.1	.9				3.6	1.9	7.4	2.6	
10-19	16.5	11.3	8.5	6.7	2.7			4.5	8.8	8.3	6.6	1.0
20-29	12.5	11.1	8.5	4.9	5.3			5.7	7.6	7.9	4.6	
30-39	11.3	13.6	10.7	8.2	3.7			7.3	7.6	4.7	9.3	
40-49	8.9	11.0	9.0	6.0	5.3	6.3		8.2	7.6	9.3	9.3	4.1
50-59	7.9	11.5	12.8	11.0	7.4	9.4		9.8	13.7	9.8	13.9	4.1
60-69	7.5	7.7	11.4	14.6	9.5	5.2		7.9	14.9	9.8	12.6	3.1
70-79	4.4	8.8	13.7	13.7	15.9	13.5	12.5	14.2	11.5	12.1	13.9	14.4
80-89	4.2	8.0	10.7	15.7	20.6	16.7	12.5	15.9	11.1	13.5	15.9	21.7
90-99	3.0	5.2	10.2	18.3	29.6	48.9	75.0	22.9	15.3	17.2	11.3	51.0
0-49	73.0	58.8	41.8	26.7	17.0	6.3	—	29.3	33.5	37.6	32.4	5.1
50-99	27.0	41.2	58.2	73.3	83.0	93.7	100.0	70.7	66.5	62.4	67.6	94.9

Table X attempts to show the relationship of test results to the accomplishments of the individuals. The percentiles were divided into deciles and against these deciles was placed the per cent of individuals who averaged a certain number of quality points per course,

who obtained degrees, who were elected to Phi Beta Kappa. There seems to be a fair degree of correspondence between test scores and accomplishment. For instance, in the lowest ranges of average quality points per course, i.e., 0-.99, reading from the top of the column toward the bottom, 23.8 per cent of those making these low quality point scores were ranked in the lowest decile, 16.5 per cent ranked in the next decile, etc. It will be noticed that the percentages decrease as we get to the higher deciles. The correspondence is excellent in the higher ranges of average quality points. At the very bottom of the table the percentiles are divided into two groups, from 0-49 and from 50-99. The first group represents the percentiles below the median and the second group represents those percentiles from the median on up. This division indicates that those making the lowest average quality points per course fall mainly in the lower half. As the average quality points per course increase there is found a definite trend toward a larger percentage of scores in the upper half. A study of the relationship of percentiles to degrees shows that a few individuals in the lowest deciles are awarded degrees but that the largest percentage of those receiving degrees falls in the upper half of the percentile scores. The tests cannot predict for single individuals, but for the group as a whole the test results are significant. The variability of the scores does not invalidate the use of the tests. No single criterion can give 100 per cent predictive value, but the tests do give a good indication of what may be expected of the student.

SUMMARY

The following results might be significant to the college faculty and administrative officials for the purpose of making revisions in the curriculum and in carrrying on vocational guidance:

1. One out of every three who entered the College during the period from 1919-1934 was graduated with a bachelor's degree. The School of Business Administration gave degrees to 24 per cent of its students. The Graduate School granted degrees to 64 per cent of its regular students. The schools of Law and Medicine graduated 56 and 77 per cent respectively. The Theology School gave degrees to 50 per cent of its regular students.

2. Fifty-three per cent of the students who enter as new students in the College fail to enter the Senior College. In Business Administration 61 per cent fail to advance into the Senior College.

3. Although the students who make the lowest average quality points per course drop out more rapidly than the others, it is nevertheless true that a number of the best students do not stay until they obtain a degree.

4. The testing program, if considered over the whole period, gives significant data. It may not work in particular cases. A correlation of +.53 between test results and grades for a large number of students shows that there is a positive predictive trend. Relating the test results to length of enrolment gives several conclusions worth considering. There is a constant rise in percentile scores from the first through the twelfth quarter. It should be noted that at the end of the third, sixth, and ninth quarters the scores are higher than for the preceding quarters; they are also higher than those for the following quarters with one exception. This means that a number of good students drop out at the end of their freshman, sophomore or junior year. It should be stated that some leaving at these times enter the professional schools.

5. There seems to be a difference in the test results made by students entering the different schools of the University. With one exception those students who receive degrees ranked higher in the test results than the average of all students in a particular division.

6. Test results rise with an increase in the average number of quality points per course.

7. There is a large range in the test scores of those students who receive degrees. The general average, however, is fairly high. The range in some departments is greater than in other departments. Students receiving their graduate degrees average higher test scores than those receiving bachelor degrees; however, there were several departmental exceptions.

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MECHANICAL AIDS IN RECORD KEEPING

GEORGE R. MOON

THE TOPIC, "Mechanical Aids in Record Keeping," divides itself somewhat naturally into several subtopics: filing accessories; record duplication devices; card sorting, counting and listing; and certain miscellaneous machines that are commonly available, such as the mimeograph and multigraph, addressograph, adding and calculating machines, and typewriters, with such improvements as the ediphone and dictaphone. At the University of Illinois we have even considered the teletype for better connections between Chicago and Urbana.

This paper will discuss the general topics of filing, duplicating records, and card sorting and counting. Mention must also be made of the ever useful mimeograph and for smaller quantities, the "Ditto." The latter is more adaptable to colored work, charts, etc., but it is not as speedy as is the mimeograph. If available the multigraph is recommended for form letters—oftentimes with a good piece of workmanship one can scarcely distinguish between typed and multigraph copy. Where the registrar is also the alumni secretary, an addressograph is almost a necessity. The saving on the addressographing of 500 envelopes as compared with work done on the typewriter or by long hand is considerable. Where the college ranks its students or in any way computes the averages, either of its own students or of applicants for admission, an electric calculator is very important. Either the Monroe or Marchant serves the purpose well. One may multiply double columns, accumulating the totals and dividing to find the average without clearing the machine. These machines are very durable; for seven years my own Monroe has seen very steady use, in most of the departmental offices as well as my own, requiring only one cleaning and no repairs.

Filing with all its accessory tasks is a rather important phase of the registrar's work. Records must be kept safely and securely, but not so well that they cannot be found when needed. Every filing system of my acquaintance has as its base the good old alphabet, and as long as students continue to go by names rather than numbers the alphabet will probably retain its importance.

There are, of course, numerical filing systems. At the University of

Illinois a numerical plan is used for admission credentials. As a student comes into residence, he is assigned a number, which is placed on the permanent record card. The credits presented for admission are placed in an envelope bearing this number, the envelope then being filed according to number. In other words, each year finds several thousand new envelopes placed at the end of the old file, each envelope in numerical order. To locate a set of credits, the clerk refers to the permanent record card in the vault, takes the number and secures the envelope with the corresponding number. The envelope is later refiled by its number.

Devices to facilitate the handling of permanent record cards have been rather numerous. All registrars face this problem, and most of them have evolved plans to fit their own situations. A number of manufacturers have also become interested in easing the registrar's burden, with, we may assume, the possibility of a slight profit at the same time. The idea that most salesmen promote is essentially the same—i.e., the visible record. Basically the various schemes are identical.

The Kardex plan has been selected as illustrative of the principle of the visible record. It involves a case holding a number of sliding trays. On each of these trays lie forty or more of the record cards, the number of cards depending on their size. The cards overlap slightly so that about ¼ inch of each is visible. On this "visible" margin is placed the student's name, number, classification and other pertinent information. This visible portion is covered by celluloid or a similar transparent substance to protect the card from wear and dirt. The information to appear on this visible part may be placed on the card itself or it may be typed on a slip designed for the purpose, which device is made necessary by the difficulty in typing along the edge of a card. Remington Rand supplies a card made to overcome this difficulty, since about an inch is detached after typing.

The trays fit into cabinets, both vertical and horizontal types being available. Each cabinet is designed to hold as many as sixteen of these trays and will thus hold from 640 to 1000 cards, depending on the size of the card. Most standard sizes, from 3″ by 5″ to 9″ by 11″, can be accommodated. The ordinary sixteen-try cabinet costs slightly over $100.

The Visible Record idea has much "Eye Appeal." If it is set up in a registrar's office to include all of the students in residence and used in combination with the University of Chicago rubber stamp record-

ing system, the cost of installation would be easily justified. I should recommend a straight alphabetical arrangement of all students in residence, transferring those who graduate or leave and inserting the new enrollees. Most visible schemes are highly adaptable for such a plan, although they require practice for the most efficient results. The Kardex program has a pocket, into which the card is inserted. Additional information about a student may be inserted on the back of the preceding pocket, thus making the file more useful for ready reference. Furthermore, the pockets themselves may be slid along the tray, making it possible to insert cards in new places when the Autumn registration juggles the alphabetical picture.

The plan has certain minor disadvantages. The case of permanent records should be kept in the vault and the trays then carried out to be worked on—or if the vault space were large enough, a case on rollers could be wheeled into the vault at night.

Other possible disadvantages might include the time involved in educating the faculty to refrain from handling the trays, since one who is unfamiliar with their operation may cause tearing of the folders (pockets) by improper insertion of the cards. The typing in of grades, course titles or information of a general nature, such as disciplinary action and honors, involves removing the card from its pocket and subsequently replacing it. The plan would call for the use of rubber stamps in listing courses, with the recording of grades in pen and ink, as is done at the University of Chicago.

The second general topic to be discussed is duplication of records. It may be safely stated that every registrar issues transcripts, and it has been agreed upon as to what should appear on a transcript. The methods of making transcripts are almost as numerous as the colleges in the nation, however. I have here the report prepared by a committee of the American Association of College Registrars under the chairmanship of Ira Smith of the University of Michigan and printed in the *Bulletin* of July 1934. Mr. Smith lists a variety of methods, and among these should be mentioned the typewriter, the blueprint, tracing cloth and so-called B-W process methods, the Leica camera method, the photostat and the dexigraph process.

The University of Illinois in Urbana has a complete dexigraphing set-up, which receives a very thorough work-out at the close of every session. The deans of most of the colleges desire records of their students, which means the making of several thousand transcripts. Three to four hundred can be made in one hour. Each student's complete record is dexigraphed, the dean being supplied with a copy within a

few days after the grades are received in the office. During the semester there is a fairly constant stream of requests for transcripts, and during the summer this demand becomes quite heavy. The equipment is also of use to us here in the Chicago Departments. The deans of the Colleges of Pharmacy and Dentistry are supplied with dexigraphed records at the close of each semester. The equipment is rented, and with complete services the rental amounts to approximately $20 per month. The total cost per transcript, including office help, all materials and rental, is under seven cents.

The dexigraph equipment has much to recommend it if the number of transcripts is large enough to justify the investment. It is possible also to arrange with Remington Rand to have the work done, the per card cost depending on the number to be copied, and ranging from five to seven cents. The results are, I believe, very satisfactory from the receiver's angle, although the black background makes it difficult to read the notations of the office clerks when one evaluates a transcript. The machine is simple to operate, speedy and economical, and anyone with reasonable intelligence and dexterity can learn to operate it in fifteen minutes or so.

The Remington Rand Company has perfected a small dexigraph outfit which does not require a dark room or elaborate equipment. They expect to sell this machine outright and believe that it will satisfy the needs of the average college. The estimated complete price is $100.

Every registrar has probably dreamed of a machine that would automatically sort his class cards at the start and close of each quarter or semester and faithfully record the grades in the proper place. With a relatively small group of students this task is not very serious, but when one deals with thousands of students, each one taking four or five courses, the manual labor is considerable. The machines developed by Powers and Hollerith have been used by some schools for years, at least for certain purposes. The general idea behind the two systems is the same—a card with columns of numbers which are punched out and an automatic sorter and counter that produces any combination of cards desired. The Hollerith card has 80 columns, while the Powers can boast of only 45. A stack of cards can be fed into the machine, which will automatically proceed to print a list, giving the names on each card and whatever information is desired.

Both the University of Chicago and the University of Illinois make extensive use of this equipment for their statistics and for their research. The physical plant departments also make use of the punch

cards for keeping account of various jobs, time spent by workmen and cost of materials. In the making of statistical reports the cards have proved to be highly serviceable. Certain factual information concerning a student is punched on a card—classification, age, sex, religion, residence and parental occupation are examples. Analysis of the student body can then be made in a relatively short time and the results placed in tabular form for presentation to the president or for publication. For statistical studies involving any large number of cases, the punch cards are almost a necessity. Studies of student accomplishments using high school grades, test scores, college grades and various data of a personal nature may all be included, and the record may be made cumulative in that the grades of each session or year may be added at the appropriate time. Once the cards are punched, and this is an operation which is surprisingly speedy, one can sort out any classification desired and have all cards counted at the same time. The operator must have his data sheets prepared and must compute his correlations, although there are machines for this purpose also.

These machines have been applied to the registration problems of certain universities. In general the idea has been to use a punch card as a class card. The proper number of cards for all limited enrolment courses are prepared in advance. There is a duplicating device on the punch machine whereby one card, properly punched, will duplicate these punches on as many other cards as are desired. The student takes his class card, fills in his name and returns it. Once the name is punched on the card, the machine will make class lists automatically and place on the lists any of the information contained on the card.

I feel it my duty to issue a warning. We have all heard of "technocracy." Mechanical aids in the registrar's office should be welcomed and should be used wherever the saving in expense justifies the investment, or where the increase in accuracy or the convenience to those whom we are servicing makes the change advisable. However, we must not become slaves of the machine. We must beware of becoming too mechanical. Most students even now look on their school registrar as a sort of metal robot. I cannot but hope, however, that we will continue to keep enough of human personal feeling in our work to prevent our presidents and boards of control from discarding us entirely and putting in our place a sort of newspaper press machine, into which the student feeds his preliminary credits and tuition, and out of which, four years later, rolls a diploma.

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THE FOLKLORE OF EDUCATION[1]

S. J. McCracken

Folklore, for the purposes of this paper, may be defined as follows: Folklore is made up of the traditional beliefs, sayings, superstitions and prejudices which are preserved unreflectively among a people.

Under such a definition, do we have a folklore of education? Concerning education, are there beliefs, sayings, prejudices, not to mention superstitutions, which are held unreflectively among our people?

Before attempting to answer this question, perhaps it would be helpful to list some of the beliefs commonly held:

1. The making of education available, at public expense, to all chlidren will guarantee the successful operation of a democracy.
2. An education guarantees economic security with short hours and easy work.
3. An education guarantees social security.
4. Any child, while he may be "slow," can master a university course of study and should be permitted to continue in school until he has finished the course.
5. The symbol of an education is a college degree.

I think we can all agree that the beliefs just named are definitely parts of our folklore concerning education. However, there are other beliefs which, while not held by the people generally, are held none less unreflectively by rather large groups of people. Some of them are:

1. We are spending too much money on education.
2. Only potential scholars should be educated at the expense of the state.
3. The teaching of religion and morals must not be tolerated in the public schools.
4. A public school at any level, since it is maintained at public expense, is under obligation to admit all who have completed the next lower school, but it is under no obligation to adjust or modify its offerings to meet individual needs.

[1] Paper presented at the 1939 meeting of the Colorado-Wyoming Association of Registrars, branch of the American Association of Collegiate Registrars.

5. If one may judge by the curriculum in the typical liberal arts college, little recognition should be given to the social, economic and political conditions of the present day, no matter how basically different they may be from those existing when the curriculum was first formulated.

Although one might challenge the accuracy of many of the above statements, no one would deny that each belief recited is held by many respectable and intelligent people. This being the case, therefore, it would seem not only logical but imperative that educators, whether they be teachers or administrators, recognize the implications involved and set about dealing realistically with them.

Let us look for a moment at the first belief, which has to do with the relationship between education and democracy. It is almost a universal belief that universal education will guarantee a successful democracy. When the census is taken, the percentage of "illiteracy" is determined. If the percentage of illiteracy is low, our reasoning would run something like this: With only a few illiterate citizens, the vast majority are literate; if literate, they are educated; if educated, they will examine critically all proposals. They will judge only after thorough consideration and discussion; they will not follow any demagogue, who appeals to prejudice, to passion or to selfish interest. In conclusion, therefore, the democratic way of life is safe.

The prompt rejoinder would be that education involves much more than just knowing how to read and write. But are we ready to say that attendance at school far beyond the time necessary to learn to read and write will more than occasionally produce the educated man "whose mind reacts correctly to his environment"?

Dr. Woodbridge, shortly before he resigned his administrative work as Dean of the Graduate Faculties at Columbia University, stated that "after seventeen years as head of what is in numbers the largest, and in reputation not the least, graduate school in America, I am certain of at least one thing—marked and progressive decrease in the intellectual maturity of those graduates of our American colleges who present themselves for advanced scholarly study." If this is true of those who go on to graduate school, what about those who leave school at some lower level?

In his book, *In the Shadow of Tomorrow,* Professor Huizinga, a Professor of History at Leydon University, devotes one chapter to the thesis that, in the civilizations of the western world, judgment

is weakening. In another chapter he seeks to prove the decline of the critical spirit.

Whether or not such judgments or opinions are accurate, there seems to be ground for the charge or admission that schools are not turning out citizens who are educated to think and act in such ways as will guarantee the preservation and the perpetuation of the democratic way of life.

Many would not agree as to the cause for this development, and many would question the truthfulness of these statements. Be that as it may, surely few will deny that, in view of what is happening in Japan and Germany, literacy and education alone are not dependable as bulwarks against the foes of democracy.

As to the changes which should be made in the curricula, methods and philosophy of our educational system to enable it to produce better citizens, there would again be great, if not violent, differences of opinion. The one thing upon which all seem to agree is that students should be taught to think—think critically and logically —in order to reach sound conclusions. For a generation or more we have conducted our schools on the assumption that this could be done by the observance of the scientific method or, as Kilpatrick says, by "testing thot."

The belief or the judgment that the teaching and the learning of the scientific method is the only needful thing is being abandoned only very slowly and very grudgingly. Gradually, and certainly not quickly enough, there is emerging the feeling, if not the judgment, that it is not enough to learn scientific principles and to study how they should be applied. As John Dewey insists, there must be developed alongside our capacity to think a philosophy, an ethics which will not only raise the question, "Is this right?" but which will also develop the ideals, attitudes and character enabling one to measure values. Nor can these values apply only to the individual himself. They must apply also to the group of which he is a part.

As Edwin A. Lee puts it, "The essence of Education in a democracy is the resultant power to choose wisely from a great variety of possibilities, whether they be in the realm of politics or recreation or general education or vocation." The great objective of public education, then, is to feed into adult life a constant flow of youth trained to make decisions wisely in terms of the conditions which they face."

In our determination to separate church and state and in our in-

sistence that religion be driven from the public schools, we have, at least by implication, ignored the importance of religion as a factor in the making of good citizens. We need to be reminded of the true purpose of an education, which was so aptly phrased by an old Irish woman when she said, "I am sending Micky to school to make a good man of him."

Other items in our folklore of education are important, but because of the limitations of this paper, only one or two of them will be discussed.

If one believes that no one should go to school who cannot be benefited by the schools as they now are organized, that the schools should not be modified as to offerings, and that the educational philosophy should not be changed to meet the needs of those who are not potential scholars, then perhaps too much money is being spent on schools and perhaps too many people are going to college.

In many quarters it is still fashionable and popular to "deplore clogging our classes with incompetents" and to become greatly distressed because youngsters are going to college "who do not understand at all the use of negative quantities in algebra, or who make continued mistakes in grammar, spelling and sentence structure." We are seldom told that Lord Macaulay and the late President Eliot of Harvard both admitted their inability to pass an examination in simple algebra. We are inclined to look upon Rupert Hughes as a very wicked man for uncovering in the life of the Father of his Country much of the same ignorance of grammar which we find in many college freshmen. David Starr Jordan, ex-president of Stanford University, tells of a boy so deficient in English that his graduation was a matter of doubt. "As this youngster seemed to have other requirements of a useful citizen, we gave him a diploma, anyway. His name was Herbert Hoover."

No one would advocate turning out engineers, doctors and lawyers who are not trained and competent. But the state-supported college or university is a public institution; it should be looked upon as service institution and not as a sieve. No publicly supported hospital would choose to admit only those who would most easily and rapidly respond to treatment. And the college supported by taxes from the farmer, the laboring man and the small business man refuses admission to graduates of public high schools at its own peril. Whether it be the taxpayers of Colorado, Wyoming, Texas or Montana, they are going to see to it that their children have a chance at

an enducation beyond the high school level. Either laws will be passed requiring the tax-supported schools to admit high school graduates, or appropriations will be withheld from the schools setting up barriers. New schools will be established that are imbued with the spirit of service.

No young man of seventeen or eighteen years of age is educated. Further, there is no place for him in our economic structure. What, then, are we to do with these young men and women who are not potential scholars? Most of us will agree that schools could be organized in such a way to give knowledge and training to all young people. Only tradition, inertia and the lack of courage, energy and imagination postpone their establishment.

If we are interested in perpetuating the democratic way of life, those responsible for the education of youth must adopt the method of the tailor and try to make the school fit the child instead of insisting that the child fit the conventionally organized school.

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WHAT NEXT IN COLLEGE EDUCATION?

E. H. HEREFORD

A CASUAL study of the colleges of the nation will reveal a constant struggle to ever increase in size. The small college advertises its benefits as a small college to get more students and to become a large institution. The large school has attempted to show the advantages to be had in a larger institution. As long as any industry has an ever increasing raw material, this condition exists. This situation will not continue in the United States. There are 100,000 fewer students in public elementary schools of the nation this year than last. This decrease has been noted since 1930, which was an all-time peak in elementary school enrolment. The birth rate has been falling since 1921. There was a decline of 7.7 per cent in the elementary school enrolment of the nation during the decade from 1925-26 to 1935-36. Many of our leading cities showed a loss in scholastic population this year over last. The diminution will reach the eighth grade this year and the college in about five more years. The following table of every one hundred persons in the United States shows the decrease in youth in relation to the population as a whole in the past fifty years:

Population Distribution by Ages in the United States

	1880	*1900*	*1920*	*1930*
Under 20	47.1	43.5	40.2	38.2
20-40	31.3	32.3	32.2	31.5
40-65	18.1	19.7	22.6	24.5
65 and over	3.5	4.2	4.8	5.8

By 1940 there will be one-fifth fewer children under ten years of age in the United States than there were in 1930.

What does this mean?

1. Fewer teachers will be needed.
2. Professional schools may have to limit the number of lawyers, engineers, architects and other professional people to be trained.
3. Social security will compete more aggressively with education for public funds.
4. With smaller families and better incomes more children are likely to go to private schools. Today private schools have a larger proportion of all school chlidren (9 per cent) than they did in 1920.

Of course I recognize that only 11 per cent of those between eighteen and twenty-one years of age are in college. When we admit, however, that the cash customers are the ones the colleges desire and when we remember that probably less than 3 per cent of the families of this country receive an annual income of $5,000 and that probably 80 per cent receive not more than $2,000 annually, it is easy to see why all of the colleges have been fishing in one "small pound."

You will say that it is still possible and even popular to work one's way through college. The college, however, cannot operate with too many working students and, too, the depression has made it difficult for them to secure work.

Many private colleges have seen their endowments shrink in the last decade, and they have found that cash customers are better than endowment.

Because of the desire and need for more students who pay cash, many colleges have admitted and kept students who were neither prepared to do nor capable of doing college work. With the decline in the birth rate, affecting especially the upper financial bracket, the scramble for these students in the future looks very interesting indeed. I am afraid we are soon to see competition for students in general as strong as it now is for athletes. With the ever increasing number of students in the immediate past no school seems to have all of the students it wishes, notwithstanding the fact that the present enrolment in the colleges and universities of the United States is over five times as large as it was at the beginning of the century. We hear about the waiting list at colleges. The only one I have seen, however, is in the Dean's office because colleges have admitted those who were not prepared and has kept them after they have proven themselves incompetent.

Ours has been an aristocracy of learning by families. I recognize that the poor boys have made many exceptions to this rule but, in general, those who were able to pay for a college education attended and those who couldn't, though mentally more capable in many instances, were denied the privilege. President Eliot said in his inaugural address at Harvard in 1869 that "The poor and the rich students are equally welcome here, provided that with their poverty or their wealth they bring capacity, ambition, and purity." This statement, however, did not make it possible for the poor to attend Harvard.

The school systems of the future must combine the Jeffersonian and the Jacksonian ideas. All of the people must have an equal opportunity for education in the lower grades. This is being very well done now. At the top we must, as Jefferson said, "cull from every condition of our people the national aristocracy of talent and virtue." We must make higher education available for those who are able to profit therefrom and cease wasting the professor's time and the school's money on those who cannot. Some might say that the state school with tax support will receive all of the benefits in this changed situation. I am not so sure of this. Those of middle age have always produced the goods to care for the dependents. Formerly these dependents were largely children and the problem a personal one. Now our dependents are in the old age group, and social security and old age pensions are going to compete strongly with education for public funds. This is going to create a serious problem for the support of higher education, for here is where the first curtailment will be made. If the private schools cease enlarging their plants and lend their support to endowment and endowed scholarships, they will be in an excellent position to leave the "small pond" and to go out into the big 80 per cent, bringing in those boys and girls who have "talent and virtue" and thereby rendering a service to those who could not otherwise attend college. The tax-supported colleges will not, as a rule, have these endowed scholarships.

The decrease in available new students should bring about more educational guidance. On the basis of high school records and new tests, students' interests and abilities will be determined and a proper course mapped out. The student will not be required to mark time in areas where he is already far ahead of his fellows nor will he be required to take courses for which he is obviously not prepared. The proof of this need is that about 25 per cent of our freshmen do not come back as sophomores. When the colleges recognize that their enrolment depends on finding and guiding the students' interests, this large loss will be materially reduced through a better adaptation of courses and with no sacrifice in standards. This large loss may also be reduced by providing freshmen with the best teachers rather than with those who are new and inexperienced or who are even graduate students.

One of the most interesting surveys on the college level in the last several years is that conducted by the Carnegie Foundation in the colleges of Pennsylvania. A uniform blanket test was devised

that would measure the achievements of students of varying abilities. This type of test will enable us to check on the strength or weakness of our students and consequently on our institutions, and will thereby enable us to rechart and redirect our college courses. With these tests we can now, for the first time, accurately appraise the mental equipment of large numbers of students. With the aid of these and similar tests student mortality should be materially reduced.

The college enrolment may be enlarged by taking the college to the student rather than having the student come to college. This may be done by establishing more junior colleges which will enable many students previously unable to leave home to secure two years of college work. There is now a very definite trend toward the junior college.

I believe the next generation will see:

1. Smaller college enrolments.
2. A plan to offer college education to many who are denied that privilege today.
3. More scientific and systematic guidance.
4. Fewer universities and colleges and more junior colleges.
5. Increased individual college instruction.

—Volume 15, Number 1

TABULATING MACHINES AND UNIVERSITY STATISTICS

WILLIAM S. HOFFMAN

THE OFFICE of the Registrar at The Pennsylvania State College has used tabulating machines for over a decade. The tabulating machine is primarily one that counts or adds digits by means of electrical contacts made where holes have been punched at appropriate places on cards. The first piece of equipment was a vertical sorter whose efficiency was equaled by its noise and which was known by the members of the staff as the "thrashing machine." At the present time the machines are no longer a part of the equipment of the Registrar's office but are in an independent department, which renders service to the entire institution. All statistics dealing with enrolment or student accounting are compiled wholly on tabulating machines under the direction of the head of this department. The office of the Registrar stands in a preferred position and receives, at certain periods in the year, priority in the assignment of the use of the machines. All statistics published by the Office of the Registrar, in addition to those dealing with enrolment and including such items as grade distributions, fraternity averages and accrediting of secondary schools, are in great measure the results of work done on the machines.

The Registrar's office publishes each year, as of October 12, a distribution of first semester enrolment figures under the following twelve headings, many of which have several subdivisions:

1. Enrolment by Schools, Classes, Curricula, and Sex.
2. Distribution of Freshmen according to Date of Original Matriculation.
3. Geographical Distribution.
4. Distribution by Ages.
5. Religious Affiliation Distribution.
6. Distribution of Parents' Occupations.
7. Students Admitted with Advanced Standing from Other Colleges, by Schools, Classes, and Curricula.
8. Students Admitted with Advanced Standing from Centers (junior colleges operated by The Pennsylvania State College).
9. Regular Students Attending Summer Session, by Schools, Classes, and Curricula.

10. Enrolment by Rank in Secondary School Graduating Classes, and the Average Grade for Each Group, except Freshmen.
11. Withdrawals up to October 12 by Classes and Curricula.
12. Part-Time Student Enrolment (students carrying fewer than twelve credits).

By means of codes, geographical and various other distributions may be made in a minimum of time. A specimen of the codes used for headings 2, 3, and 5 follows:

TABLE II

DISTRIBUTION OF FRESHMAN CLASS ACCORDING TO ADMISSIONS

	Code
Newly matriculated, September 1938	0
Newly matriculated, 1938 Summer Session	1
Newly matriculated, February 1938	2
Newly matriculated, September 1937	3
1937 Summer Session	4
Newly matriculated, February 1937	5

TABLE III

GEOGRAPHICAL DISTRIBUTION

County	*Code*
Adams	01
Allegheny	02
Armstrong	03
Beaver	04
Bedford	05
Berks	06

TABLE V

RELIGIOUS CENSUS

	Code
Baptist	01
Brethren	02
Christian	03
Christian Science	04
Church of God	05
Church of Christ	06

In order to indicate briefly one use of the machines, the various steps involved in registration up to and including the preparation of the student's bill follow.

The student, after securing the approved schedule from his adviser, fills in, as part of the registration procedure, a card showing course numbers, codes, sections and credits. Each student receives a number at the time of original matriculation. These numbers, when arranged consecutively, place the students for any given year in almost exact alphabetical order. The cards, when filled out, go at half hour intervals to the statistical office, where class cards are waiting in tub files.

The information for any given course, as "Section A, English Composition 21," is punched on a class card. From this card others can be duplicated automatically. The cards then run through an interpreter, which types at the top of the card the name, section,

etc., for the course. These cards, in any previously decided quantity, are then filed in tub files awaiting the arrival of the student's schedule. Master cards for each student, previously prepared, are ready in another file. These master cards are prepared in exactly the same way as is the original class card.

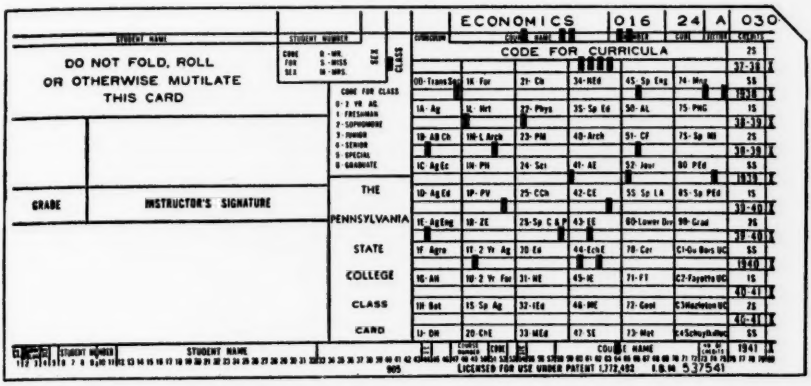
When the student's schedule is received at the statistical office, his master card and a class card for each subject are pulled by student clerical assistants, and by means of the duplicating punch the student's name and number are punched and interpreted on them. The class cards are then sorted by classes (subjects).

The office has trained three teams, who work on eight-hour shifts during the registration period. Registration ends at noon Wednesday; Thursday morning before eight o'clock class cards are available for instructors who call for them at the statistical office.

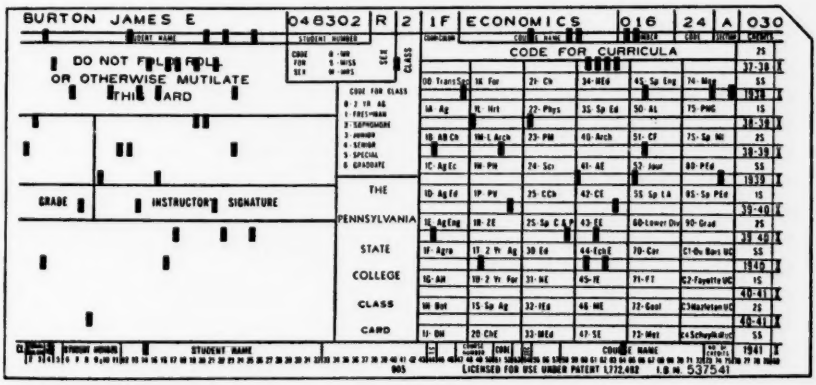
Just as soon as the class cards are available the work of preparation of the student's bill is begun. Cards for all credits and debits for each student have been prepared in advance. These items cover such classifications as scholarships, dormitory rents, deferred payments (previously arranged), and even such minor items as unpaid library fines. At the time when the student's master card is pulled for the preparation of his class cards, the various credits and debits are removed from the file and placed with his master card. All of the cards containing these debits and credits and duplicate class cards are arranged alphabetically and then run through a billing machine. Bills are printed in triplicate. When the total amount of the bill is computed the machine indicates also the total number of credits carried, which in some cases has a bearing on the amount of the student's fees. The machine automatically takes care of subtractions (credits) but does not indicate them in red ink. Since the items are arranged alphabetically by students, these bills are in alphabetical order when finished and ready to turn over to the Bursar.

The Friday of the second week of the semester (one week and two days after the opening of College) is usually set aside for the collection of fees, and the students have one full day, between classes, to report for this purpose. Immediately after the preparation of the bill the accounts receivable for every department in the institution are run, and a balance is struck the day following the collection of the fees. Before the installation of these machines the College has not struck a true balance at the end of the semester.

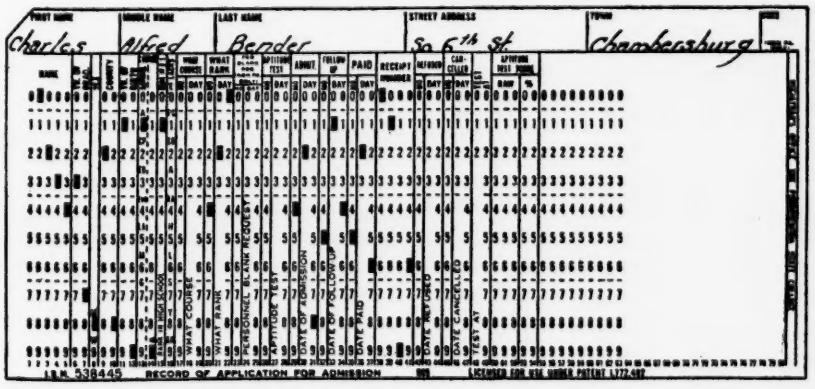
The class cards, when received by the instructor, become his offi-



COURSE DESCRIPTION CARD



A CLASS CARD INTERPRETED AND READY TO SEND TO THE INSTRUCTOR



RECORD OF ADMISSION

cial roll and are held by him throughout the semester. At the end of the semester he places the grade in the appropriate place, signs the card, and returns it to the Registrar's office. If the instructor cares to do so he may use a rubber stamp for his signature or he may use only his initials. At the end of the first semester last year 41,394 grades were received. Each recorder received her grades in alphabetical order, and they were recorded in sufficient time to have grade reports in the United States Mail for all students within a two-week period following the end of the semester.

The admission of students to the freshman class is carried on almost entirely by tabulation machine cards. By punching the date when questions were asked of the students or of the high school principal it is possible to keep correspondence alive and to send follow-up letters with a minimum of effort. Last year more than 2800 formal applications were submitted, and correspondence for every one of these individuals was kept alive by the use of the cards. In no instance did any student fail to receive a follow-up letter within a two-week period if he failed to answer a letter. Every week a tabulation of admissions was available for each department head of the College.

The cuts are used through the courtesy of the International Business Machine Corporation, New York City.

—*Volume 15, Number 1*

SUMMARIES OF STUDIES REPORTED

Photographic Equipment and Classes in 170 Colleges and Universities

HUGHES, WOLFF & COMPANY, National Advertising and Marketing, of Rochester, New York, recently made a study of the photographic equipment in 170 colleges and universities. The tabular information below is based on 126 returns.

	Yes	*No*
Do you have University Classes in Photography	63	56
Do you have University Camera Club	70	46
Facilities for: Developing	89	27
Printing	88	25
Enlarging	82	28
Do you operate Photo-copying Machine	41	54
Other copying Methods	17	

Photo-copying Machines located in the following departments or divisions:

Registrar's Office (22)
Photographic Bureaus (12)
Library (8)
Physics (4)
Engineering (4)
Printing (3)
Mechanical Arts (1)
University Store (1)
Stenographic (1)
Entomology (1)
Agriculture (1)
Research (1)

A Study of Students Eliminated from Temple University in June 1938

THE OFFICE of the Registrar of Temple University completed an extensive study of students eliminated during the 1937-38 term. The study included 331 persons who were not graduated and who did not return in September 1938. It aims to suggest some of the reasons for elimination and to indicate the total mortality in the undergraduate colleges within a single year.

In a study of this nature, it is difficult to determine with any degree of accuracy all the reasons for elimination without a statement

from the students concerned. The investigation was confined, therefore, to phases from items of information which can be interpreted from the student's record.

Of the 331 students eliminated, 149 or 21 per cent of the total enrolment were registered in the College of Liberal Arts and Sciences, 71 or 6 per cent of the total enrolment in Teachers College, and 111 or 12 per cent of the total enrolment in the School of Commerce. The total number is slightly over 12 per cent of the total day enrolment of the undergraduate colleges.

According to the College Student Mortality Study by the Office of Education,[1] 45 per cent of the students enrolled in 25 American universities left without transfer or returning at a later date. At Temple University this figure drops to 40 per cent of the total enrolment. This high degree of persistence is probably due to selective admissions and the comprehensive list of offerings within the University.

Of those eliminated, 145 or 44 per cent, were unaccounted for, while 61 or 46 per cent sent transcripts to other colleges, and 38 or 26 per cent sent transcripts to the professional schools of Temple University.

The median of semester hours earned at the time of departure for those who had transcripts sent to professional schools is 64 semester hours. This classification occurs only in the College of Liberal Arts and Sciences, and suggests that most of these students transferred to the Dental School or professional schools requiring two years of college training. It appears that most students who transferred to other institutions did so during the first two years, while most of those who withdrew for unexplained reasons did so at the close of or during the first year. Those who had transcripts sent from the College of Liberal Arts to professional schools had a median grade average of 2.05, while those that had transcripts to other colleges, had a median grade average of 1.99.

The ability distribution among the various students who were unaccounted for suggests that financial problems, vocational problems, or problems of adjustment forced some potentially good students to withdraw.

If there are any questions suggested by this material which de-

[1] McNeely, John H., *College Student Mortality,* Bulletin 937, No. 11, Office of Education, Washington, D.C., 1938.

serves further study, they are these: (1) For what reasons do students of good ability and good records transfer from the undergraduate colleges to other institutions? (2) What is the success of those who transfer from Temple University to other institutions? (3) What percentage of students who transfer to Temple University are eliminated and what in general is the quality of the work of all transfers? (4) What reasons are attributed to the withdrawal of those students within the "unaccounted for" classification who are, on the basis of the measures at hand, potentially good students?

Copies of the complete study are available in mimeograph form and can be procured from the Registrar, Temple University, Philadelphia, Pennsylvania.

Economic Status of 46,000 College Alumni in the United States

HOW DO college graduates fare after they leave college? From 46,000 college alumni graduated from 31 institutions of higher learning throughout the United States from 1928 to 1935 the Office of Education, Department of the Interior, has obtained some of the answers. The college alumni study, directed by Dr. Walter J. Greenleaf, Office of Education Specialist in Higher Education, was conducted with emergency relief funds by 31 co-operating universities. The following significant facts which the survey revealed were reported today by John W. Studebaker, Commissioner of Education:

Age at Graduation—The typical college graduation age for alumni reporting was 22 years.

Marital Status—College men tend to marry earlier and in larger proportion than college women. Western college graduates marry sooner and in larger proportion than college men from any other section of the United States.

Children—The largest proportion of children is found in the families of western men alumni and the smallest proportion in the families of eastern women alumni. Married alumni who have no children are represented by 57 per cent of the men and 61 per cent of the women. Children resulting from marriage of 12,233 men graduates number 7727; from marriage of 6359 women 3463.

Divorce—The divorce rate among college alumni is low, com-

pared with that of the country as a whole. The alumni rate in this study over the eight-year period is 19 divorces per 1000 marriages. More college women than college men are divorced.

Residence—More than half of the men and women graduates in this study now live in metropolitan cities of 100,000 population or more.

Rents—Younger graduates one and two years out of college tend to live with relatives and pay no rent. Typically, a young man just out of college pays from $19 to $25 per month for living accommodations His rentals increase annually from $1 to $3 per month until after eight years he is paying $38 per month. College women find rents for living quarters slightly higher at first, increasing to $34 a month after eight years.

Undergradutae Majors—Engineering and business administration are the most popular undergraduate majors for men. Women graduates majored most largely in education and English.

Employment—Men tend to find work eventually that is in line with their specialization in college. Women find their work less in line with their major college study.

Self-Help—Sixty-eight per cent of the men and 43 per cent of the women earned from one-fourth to all of their college expenses.

Graduate Study—One-half of both men and women alumni in classes 1928 through 1935 continued later with graduate study.

Graduate Majors—The most popular graduate majors were medicine, law, education, business, chemistry and economics for men, and education, English, sociology, history, Romance languages and home economics for women.

Extension Work—One of every eight men and one of every five women co-operating in this study reported having taken extension courses.

Degrees—Three-fourths of the men and seven-eighths of the women hold one degree only, either the bachelor's degree or first professional degree.

First Jobs—Personal initiative plus experience prior to graduation account for half of the placement of college graduates in first jobs.

Why Chosen—Thirty-five per cent of the women and 27 per cent of the men reported choosing their first jobs because the work was the kind they wanted. Thirty per cent of the men and 19 per cent of the women were unable to find the work they wanted.

Unemployment—Fifty-eight per cent of the men graduates and 61 per cent of the women graduates have never been idle at all since graduation. Graduates of the 1932 class were out of employment for the longest periods.

Relief—Ninety-eight per cent of the men alumni and 99 per cent of the women alumni have never been on relief.

Employment—Ninety-six per cent of all the men and 93 per cent of all the women reporting were either permanently or temporarily employed. After the first year out of college about three-fourths of both men and women find gainful employment. About one-sixth of the graduates either continue graduate study for higher degrees, or, in the case of women, marry and become homemakers. After eight years most of the men are employed (97.9 per cent) few are studying for advanced degrees (1 per cent) and 37 per cent of the women have become homemakers.

Owners—After graduation 10 per cent of the men start out in a business or profession of their own. After eight years 31 per cent are independent of employers. In the West 9.5 per cent of the women one year out of college own their own businesses. The proportion increases until after eight years 19 per cent are established as owners or part owners.

Employees—Fifty-three per cent of the college men found work after graduation as clerks or unskilled workers. Of the women graduates 52 per cent began with the clerical types of work.

Salaries—The salary scale of men alumni is higher than that of women alumnæ although older women receive more than younger men generally. The average college man out of school one year receives a typical salary of $1,314; the graduate out of school two years $1,455; three years, $1,551; four years $1,684; five years, $1,847; six years $2,008; seven years $2,138 and eight years, $2,383. Women graduates receive salaries ranging from $1,092 the first year out of college to $1,606 the eighth year.

Investments—Seventy-seven per cent of the men and 71 per cent of the women report having no investments of any kind.

Occupations—Nearly two-thirds of the college alumni reported themselves in the professional group. Seventeen per cent of the men were teaching, 13 per cent were in engineering, 9 per cent in law and 6 per cent in medicine. Forty-eight per cent of the women alumni were following teaching careers; while 29 per cent reported general occupations, including 16 per cent in domestic work.

Earnings—Among the best paid occupations for college men immediately after graduation are dentistry, forestry and telephone work which pay typically $2,000 or more. Agriculture, architecture, engineering and public office positions pay $1,500 to $2,000 median salaries the first year. After eight years groups who are earning typical salaries of $2,500 or more are in dentistry, medicine, law, public office, architecture, insurance, research, forestry, business and telephone work. Those, who after eight years earn from $2,000 to $2,500 median salaries are in manufacturing, merchandising, engineering, banking, pharmacy, teaching, agriculture and real estate. Those who receive less are in many other occupations which include journalism, ministry, and clerical service.

Typical—In general a typical graduate will enter an occupation paying about $1,321 (median) for his first year. After eight years he will be receiving $2,416 (median). Eleven per cent of the alumni out of college eight years report earnings of from $4,000 to $5,000 or more while 11 per cent receive $1,500 or less.

For Women—Nursing and teaching are the best paid occupations for a woman during her first year out of college. The median salary for nursing is $1,692 and for teaching $1,236. A woman out of college one year receives typically $1,109 compared with $1,608 for the woman eight years out of college.

A summary report of the college alumni survey entitled, "Economic Status of College Alumni" has been prepared by Dr. Walter J. Greenleaf and is available from the Government Printing Office, Washington, D.C., as Office of Education Bulletin 1937, No. 10—price 25 cents.

EDITORIAL COMMENT

Why Larger Enrolments?

PAPERS presented at the recent Institute for Administrative Officers of Higher Education at the University of Chicago show the usual concern about college enrolments. Apparently the opinion still prevails among administrative officials and others intimately associated with institutions of higher learning that college and university enrolments must continue to rise; that it would be a calamity if they failed to do so. Perhaps it would. It would appear, however, that we are approaching the time when we should examine carefully our reasons for urging the continued expansion of college enrolments.

Our most effective appeal has been to the democratic ideal. Every boy or girl, it is said, should have unlimited educational opportunities; the base of our educational program should be broadened so that it will adapt itself better to the varying needs and abilities of youth; and finally, general education should be extended to all through at least the second year of college. In supporting a philosophy of this kind, what answer are we to give when we are asked when we really plan to complete general education? At one time, the taxpayer was encouraged to think that eight years would be sufficient. Then we proposed that general education could be completed only by means of secondary opportunities for all youth. Now, it seems, we can't manage the task in twelve years and would like the opportunity to try fourteen. Is there some period of time in which general education at public expense can be effectively completed, and if so, what is that period? It appears not unlikely now that the next decade will see most colleges and universities admitting all graduates of accredited high schools without qualifications of importance other than graduation. When this has occurred, what steps will be taken to adjust the program of higher education to the larger numbers of students of low ability that will be in attendance? Can we risk the waste of money and energy incident to a policy of the survival of the fit, or must we plan for selection and elimination at some advanced point in the college program; for example, at the beginning of the upper division? We may well consider whether the American system of higher education can adhere to such worthwhile ideals as scholarship, advancement of knowledge, and production of leader-

ship without at some point becoming deliberately selective. Obviously we cannot continue endlessly to adapt our curriculums at higher and higher levels to lower and lower abilities.

Lack of employment for youth has been suggested as another reason for increased enrolments in colleges and universities. It is suggested that colleges will have to play a custodial as well as an educational role. True, men and women of college age cannot be left to pass their youth in idleness. Some way must be found to keep them occupied in ways profitable to themselves and to society. It does not follow, however, that the only way to accomplish this is to open the institutions of higher learning to all who are not otherwise occupied. The American educational system should not be asked to forsake reasonable ideals and standards in order to compensate for political and economic mistakes. It is questionable indeed whether a college can assume a custodial role and at the same time perform effectively its educational function.

Still another argument advanced for larger enrolments in college is the evidence that many boys and girls of excellent ability are prohibited from attending because of economic conditions. It is pointed out that a fair proportion of potentially superior high school graduates never attend college and that a large number who do attend are persons of little promise. This unquestionably is true. However, it can hardly be argued that the mere admission of more and more students will solve this problem. The solution lies in seeking out these desirable candidates and in providing subsidies that will enable them to enter and remain in college.

Whether we are to have more students in attendance at colleges and universities should be decided in the interests of the social order served by these institutions, not in terms of an individual's or an institution's ambition for expansion. It is hardly sound educational statesmanship to argue for more enrolments in order that we may appeal to our legislatures and constituencies for more support to serve more students—these to be used, in turn, as arguments for still further budget increases. Before we can properly answer the question as to how many students and what students should go to college, we must settle upon a sound basic philosophy; we must define clearly the function of higher education in a democracy. As yet, we have failed to do this.

—LEO M. CHAMBERLAIN

Shall We Supervise College Teaching?

A GREAT deal of effort is expended every year in administering standardized, objective tests, in securing teachers' judgments, and in otherwise accumulating a large fund of information about students, in order to have as valid a basis as possible for counseling and guiding students. But one seldom hears of the counseling of college faculty members.

In the elementary schools, and to a lesser extent in the high schools, counseling of teachers is provided for in the system of supervisors and supervising principals. It is the business of the supervisor to get as much information as possible—by class visitation, through a study of pupil progress and in whatever other ways the supervisor may devise—concerning the effectiveness of each individual teacher. The supervisor is expected then to proceed to use this information as the basis for counseling, in the hope of improving the teacher's effectiveness.

For some years, in order to teach in an accredited elementary or high school one has been required to complete certain specified, formal courses in what has been termed "Education." Even those who formerly have been very skeptical are beginning to think that perhaps there is something worthwhile which college teachers and administrators may get from "Education." May it not also be true that there is possible value in the counseling of college teachers? Just as the method of presenting material to college students differs from methods employed on the elementary or secondary level, so also must the bases for counseling college teachers vary from those used in the lower grades. While the time *may* come when direct classroom supervision will be as usual in college as in other branches of the educational system, college teachers should be given the benefit *now* of such means as are available for improving their teaching.

College administrative officers are continually, though not always consciously, evaluating the effectiveness of each staff member. One means of judging this effectiveness is the extent to which students find the faculty member helpful and stimulating. If the registrar's office has established in the minds of students its desire to be as helpful as possible and to be more than a mere recording office, there probably is no other place on the campus where student evaluation of faculty members may be more quickly and more accurately sensed. The registrar who is interested in helping his colleagues may often gather information personally or through his clerks which

can be of great value to the teaching faculty members. Having secured the information, there is the problem of conveying it to his colleagues in such a way that they will welcome and profit by it. The method employed must vary according to the temperament of the faculty member concerned. Discovering the best method to use with each faculty member is not an easy task. But the dividends which accrue in the counseling of teachers are as great and often greater than in the guidance and counseling of students!

—WYATT W. HALE

Who Will Ring the Bell Then?

A GREAT many trite things are being said these days about the government's part in paying the bills for the average citizen. Even now there is talk of the possibility of relieving the tax-payer of some of the responsibility he has assumed in respect to the public schools. Of course this would be welcome aid for many schools in distress; those people, however, who believe that pride and vital interest result from a feeling of responsibility and ownership are wondering to whom the school would then belong.

I once taught in a country school . . . one of those one-room, red brick structures that dot the landscape of rural America. Around it the rolling countryside was a panorama of varicolored fields blocked out by groves of oak and chestnut and interwoven with groups of well-kept farm buildings. Clean fence strips and freshly painted buildings bespoke pride of ownership—a critical pride not easily understood by a person unfamiliar with the ways of farm folk.

The school belonged to them. They painted it inside and out in the summertime, scrubbed and cleaned it to a shining state of fragrant preparedness in the fall; they built the roads with their own hands, shoveled it clear of heavy winter snows . . . paid earmarked "school tax."

The annual entertainment was the crowning event of the year. That was the night that put the teacher on his metal. The scoffers and neighborhood Huck Finns ouside had to be controlled and repressed while, inside, proud parents sitting bolt upright on school benches saw and heard their children on display. That night, too, each visitor gave a small contribution to the school fund.

This fund bought maps, a bell, an organ, and many devices which were unknown to most rural schools. They were part of the

"home ownership" campaign. When the bell came, a belfry was necessary. One, who like many of his neighbors was not only a tiller of the soil but a carpenter as well, came with hatchet and saw and built the belfry. After that, the farmers set their clocks with the ringing of the school bell.

Thoughts of three-thirty and dismissal time bring a wave of nostalgia, a faint whiff of scrubbed wood floors, and memories of fiery fresh young faces filing past me as I rang the bell. The bell told the countryside that "school was out" and boys and girls would soon be home to do their chores.

But three-thirty and the school bell bring another memory of school and countryside. It was Autumn 1918. The children were filing out when an old Model T rattled up the hill at shaky top-speed and jerked to a standstill out front. A farmer jumped from the car and grabbed the bell-rope. He kept ringing that bell until the sun had set and the peace and calm of evening had settled over vales and meadows. He wanted every person to know that "the war was over," and the school bell was the best way of telling everyone—for the school belonged to everyone.

Now the government has built the roads to the school, the government clears the snow in the wintertime, and they, in Washington, are talking about giving money which—who knows might be used to buy bells and organs and maps. When the government has done all this, I wonder whether the farmer will build the belfry; whether he will take turns with his neighbor in painting and cleaning his school; whether the school will be the hub of rural life; whether the school bell will be the first means of spreading good news—or will be farmer feel that the school is no longer his—that it belongs to the government?

—ANONYMOUS

A Protest to the President of the United States

The President
The White House
Washington, D.C.

DEAR MR. PRESIDENT: As president of the American Association of Collegiate Registrars I wish to express the general sentiment of American colleges and universities as absolutely opposed to any change of the Thanksgiving date on such short notice. College cata-

logues are already printed and class schedules are already arranged. Entertainment programs which involve contracts with leading artists must be changed in face of almost impossible obstacles. Chapel speakers and lecturers already engaged will have their itineraries disrupted. Those colleges whose football schedules are involved will be faced with the disciplinary problem of combatting the natural student tendency to observe official Thanksgiving weekend and also to leave college campuses on the week-end of the previously scheduled Thanksgiving game. In general, colleges would not oppose the changing of Thanksgiving had they been informed within a reasonable time. I include herewith a cross section of college opinion as reflected by the officers of our Association.

M. E. Gladfelter, Registrar, Temple University says one or two years notice should be given for such a change. H. H. Armsby, Registrar, Missouri School of Mines says general opinion among faculty opposed to change seeing no reason to upset long tradition. E. C. Miller, Registrar, University of Chicago protests change. E. D. Cockins, Registrar, Ohio State says unofficial campus opinion unanimously opposed to a change which would disrupt all university programs. H. M. Showman, Registrar, University of California at Los Angeles, says sentiment at the University is against change.

Yours respectfully,
WM. S. HOFFMAN, *President A.A.C.R. and Registrar The Pennsylvania State College*

Democracy Defined

WHAT is this democracy we hope to preserve in America? Speaking for our schools and colleges, I think the old watchword which our sister republic of France takes as her motto—Liberty, Equality, Brotherhood—may be used also to express our democratic ideals of education.

Liberty: We believe we should educate our children so that they may be fit to be free; so that they can use liberty for their own souls without hurting others.

We believe that scholars who seek new truth must have liberty to follow the light of their reason, without being told by a government what they must think and where they must stop thinking. Only thus can man's knowledge and wisdom be increased.

Equality: We believe that as far as is humanly possible young

people should have equal chances for such education as they are able to absorb, equal chances for education which will develop such brains and other gifts as they are born with. In our schools and colleges we try to judge each boy and each girl on the merits of his or her own mind and personality, no matter from what family, race, religion or political creed he or she may spring.

Brotherhood: We believe that all Americans are comrades in our great enterprise of seeking the welfare of all the citizens of our nation. We loathe the creeds of cruelty and hatred preached in the totalitarian states. We teach kindness, helpfulness, and generosity toward all.

Do our schools and colleges actually achieve this democracy, these high ideals of Liberty, Equality, Brotherhood? Being only human and therefore far from perfect, they do not always attain them. But we are sure we want to keep such ideals as our aim—to hold them up as the shining goal toward which we march.

—VIRGINIA E. GILDERSLEEVE

From Our Readers

I SHOULD like to take this opportunity to express my satisfaction and delight in the great improvement in the JOURNAL. I regard it the most useful publication which comes into the office and look forward with interest to each issue.

—GRADY S. PATTERSON, Registrar, Wake Forest College

I read with much interest the first article in the April number of the JOURNAL of the American Association of Collegiate Registrars. It is a timely discussion of facts appertaining to an important and difficult problem. The summary of the results obtained by the study, as set down on pages 272-273, are very interesting.

—JAMES H. DUNHAM, Dean, Temple University

I have been particularly impressed with the last issue of the JOURNAL of the American Association of Collegiate Registrars. I get a lot of use from all the numbers, but this one seems to me even better than average.

—JOHN A. ANDERSON, Registrar, Pasadena Junior College

The JOURNAL is a source of inspiration, and I find in it many procedures that prove helpful to one so new in this type of work. My duties as full-time Registrar in this institution began as of September 5, 1938. Already, this JOURNAL has helped me considerably.

—LOUISE C. GUENTHER, Registrar, Howard College

IN THE OFFICE

POINT-HOUR RATIO CHARTS: Mr. R. H. Mahn in the office of the registrar at Ohio University has solved the problem of obtaining point-hour ratio charts by the use of the Monroe machine on which the decimal reciprocal of the number of hours is multiplied by the numbers of points. For example, to find the ratio between 24 hours and 1 to 72 points (where a 3 point grading system is used), the reciprocal of 24 is entered in the machine, and as the points are run through by depressing the plus key, ratios are read from the dial and entered in table forms. Time involved depends on the rapidity with which ratios can be copied.

We now use the following point-hour ratio charts for obtaining scholastic averages:

12 to 19 hours for 1.000 to 3.000 averages
124 to 140 hours for 1.000 to 3.000 averages
1 to 125 hours for 2.000 to 3.000 averages
84 to 116 hours for 2.450 to 3.000 averages

CHANGE OF ADDRESS: Registrar Hoffman of Pennsylvania State College has devised a form which is used for properly reporting student address changes. After the student has recorded the new address on the form in the office of the registrar, the information is transferred to the bursar, who passes it on to the Dean of Men or Dean of Women, from which office it goes to the School Dean and ultimately to the student's advisor. Copies of this form may be obtained from Registrar William S. Hoffman.

GRADE REPORTS: Registrar Dilley of Ohio University reports a triplicate grade report form on which is typed during the semester the courses that the students are taking. These reports are alphabetized and are ready for typing in the grades and points as soon as the grades come in at the end of the semester.

Examinations closed at five o'clock, Thursday afternoon, and we delivered the grade reports to the post office by 6:15 P.M. on Saturday, for those students who left self-addressed stamped envelopes. Carbon copies had also been placed in the exchange boxes of the deans of the colleges and the Dean of Men or Dean of Women by the same time. Samples of this form may be obtained by request.

TRANSCRIPT DESK: The office of the registrar of Temple University has installed a transcript desk on which students are permitted to view and copy their permanent records. Because of the practice which allows students to view their records only in the presence of an office

employee, a desk was devised to permit students time and freedom in the examination of their records. The desk has removable drawers upon which the record is placed, and closed under a plate glass top. The size of the desk top is 5 feet by 2 feet, 8 inches.

This has proven very satisfactory, as it removes the feeling of suspicion which a student usually harbours when told that he must examine his record only in the presence of a clerk.

Permitting the student to copy his record frequently saves us the trouble of issuing a transcript. Blue-print plans of this desk can be obtained by request.

PHOTOSTAT JUNIOR: The College of Worcester has made an intensive study of the Photostat equipment. After a careful investigation the Photostat Junior was selected.

Smith College has also found the Photostat Junior an accurate time saving device.

The University of North Dakota has installed a Photostat Junior to take care of transcripts of records.

REPORTED TO US

PRESIDENT William S. Hoffman has appointed the following committees for the 1939-40 term:

Committee on Local Arrangements

G. W. Lamke, Washington University, St. Louis, Miss Elma Poole, St. Louis University, St. Louis, Co-Chairmen
S. W. Canada, University of Missouri, Columbia
Miss Sarah Ostner, Lindenwood College, St. Charles
W. B. Parker, Washington University School of Medicine, St. Louis
Frederick Marston, Dean, Kemper Military School, Boonville

Committee on Special Projects

Ira M. Smith, University of Michigan, Ann Arbor, Michigan, Chairman
M. E. Gladfelter, Temple University, Philadelphia, Pennsylvania
Fred L. Kerr, University of Arkansas, Fayetteville, Arkansas
J. P. Mitchell, Stanford University, Stanford University, California
K. P. R. Neville, University of Western Ontario, London, Canada
R. M. West, University of Minnesota, Minneapolis, Minnesota
C. H. Maruth, State University of Iowa, Iowa City, Iowa
W. W. Hale, Birmingham-Southern College, Birmingham, Alabama

The entire Committee on Office Forms and Equipment has been reappointed.

The Committee on Regional Associations has been reappointed with exception of P. F. Banmiller of Villanova College who will replace William S. Hoffman.

At the meeting of the Executive Committee of the A.A.C.R. on April 24 it was voted that each member of the Executive Committee, the Chairmen of each standing committee and the Chairman of the Committee on Local Arrangements compile a manual covering the procedures and duties of his office or his committee and submit such a manual with samples of related correspondence to the Secretary of the Association; and that the Secretary arrange the material submitted and prepare copies for the succeeding officers and the committees of the Association.

Educational Meetings

COME to California—The 1939 meeting of the *Pacific Coast Association* will be held in San Francisco on November 12, 13, and 14, with headquarters at the Sir Francis Drake Hotel. The Committee on Arrangements consists of Miss Mary Jane Learnard of San Francisco Junior College, Chairman; Miss Constance Steele of the University of California,

Berkeley; and Mr. John Hopkins of Williams Junior College, Berkeley. This committee is already at work on what promises to be a good meeting. The Golden Gate International Exposition has honored us by naming Tuesday, November 14, as Registrars Day at the Exposition! We are looking forward to a record-breaking attendance. A special invitation is hereby extended to registrars all over the United States to join with us in this meeting. Most of them will want to see the California as well as the New York Exposition anyway, and this will offer a fine opportunity to make a visit to the Pacific Coast, see a wonderful exposition, and meet the western registrars.—JOHN A. ANDERSON, President.

Fourteen colleges were represented at the meeting of the *Alabama Collegiate Registrar's Association* which was held April 7 at Alabama Polytechnic Institute.

After a short business meeting the subject of "Relating College Admission Requirements to a Changing Public School Curriculum" was discussed by Mr. James Chrietzberg, Principal, Holtville High School, Dr. Paul Irvine, Alabama Polytechnic Institute, and Dr. W. L. Spencer, State Department of Education.

This was followed by special discussion groups led by Dr. Wyatt W. Hale, Birmingham-Southern College, Mrs. L. B. Sawtell, Troy State Teachers College, Mr. A. C. Shelton, Jacksonville State Teachers College, and Miss Mary A. Robertson, University of Alabama.

Lester M. Garrison, of Snead Junior College and Dr. Wyatt W. Hale, spoke on the problem of adjusting freshman and sophomore courses of study in order to facilitate transferring to special curricula.

After a dinner in Smith Hall, Mr. R. B. Draughon, Executive Secretary of the Alabama Polytechnic Institute, spoke on "The Registrar and Human Relationships."

The following officers were elected for the coming year: President, Mrs. Edna Reams Lamar, State Teachers College, Florence; Vice President, Lester M. Garrison, Snead Junior College; Secretary-Treasurer, Mary McMillan, Judson College.

The quarterly meeting of the *Conference of Registrars of the Chicago Area* was held May 11, 1939. Forty members were guests of President John Bartky and Mrs. Emma Fleer Muller of Chicago Teachers College, and Mrs. J. Anthony Humphreys of Woodrow Wilson Junior College.

The chairman, Mr. E. C. Miller, presided at the business meeting which followed the luncheon and the program included a paper, "The Relation of the Registrar to the Dean, which was presented by Mr. B. J. Steggert, Loyola University; a report on the recent convention of the Association by Katherine George, Northwestern University.

Discussion of questions and of the advisability of the group working co-operatively on a special project followed. Mr. E. Dyrness, Vice President and Registrar of Wheaton College, was appointed chairman of a committee to organize the work on a special project.

The following officers were elected for 1939-40: Mr. John McHugh, De Paul University, Chairman; Mr. Donald Steward, Central Y.M.C.A. College, Vice-Chairman; Miss M. Frances McElroy, National College of Education, Secretary.

The *Eighth Educational Conference of the Educational Records Bureau,* the Co-operative Test Service, the Committee on Measurement and Guidance of the American Council on Education, and the Commission on the Relation of School and College of the Progressive Education Association will be held at the Hotel Roosevelt in New York City on October 26 and 27 and will be open to all educators, whether or not they hold membership in the sponsoring organizations. Reservations should be made in advance through the Educational Records Bureau. About eight hundred educational leaders from colleges, universities, independent and public schools attended this conference last fall.

The following speakers have already agreed to appear on the program: President Henry M. Wriston of Brown University, President Marion Park of Bryn Mawr College, Superintendent A. J. Stoddard of Philadelphia, Dr. Edwin A. Lee, Director of the National Occupational Conference, Dr. Edward S. Noyes, Chairman of the Board of Admissions of Yale University, Mr. Louis Zahner of the Groton School, Dr. Luther Gulick, Director of the Regents' Inquiry.

THREE federal educational agencies—the Office of Education, the National Youth Administration, and the Civilian Conservation Corps—have been consolidated with the United States Employment Service, the Public Health Service, and the Social Security Board, in a Federal Security Agency, headed by a Federal Security Administrator; like the other new agencies under the plan, this one will be apparently tantamount to a new government department.

The fourth educational agency, the Education and Training Section of the Works Progress Administration, will be transferred with the remainder of the WPA (except for the NYA) to a Federal Works Agency.

Most epochal of the shifts from a historical viewpoint is that of the Office of Education. Created in 1867 as an independent department, it has been since 1869 a part of the Department of the Interior. In 1933 it absorbed the Federal Board for Vocational Education, created as an independent agency by the Smith-Hughes Act. Widely commented upon at the time was the assignment of the National Youth Administration to the WPA instead of the Office of Education, but the two will now be together

under the new plan. The CCC education program from the first has been under the direction of the Office of Education.

At the June 1939 meeting of the Executive Committee on the American Council on Education President Zook reported the following grants of money since the last meeting of the Committee:

From the Carnegie Corporation

$6,500 toward support of publication of two handbooks on higher education.

From the Carnegie Corporation, through the Carnegie Foundation for the Advancement of Teaching

$6,850 for continued support of modern language studies under the direction of Dr. Robert Herndon Fife.

From the General Education Board

$47,000 for the use of the White House Conference on Children in a Democracy, toward the preparation of materials. Available from May 15, 1939 to June 30, 1940.

$16,450 for the further support of the Association of School Film Libraries, Inc., during the year beginning July 1, 1939.

$5,125 for the use of the Association of School Film Libraries, Inc., in the conduct of an experiment of distributing sound recordings of value in general education. Available for the period terminating June 31, 1940.

$5,425 for the use of the Commission on Teacher Education in assembling, organizing, and interpreting materials of the Adolescent Study of the Institute of Child Welfare at the University of California. Available from May 1, 1939 to February 29, 1940.

$4,500 for the use of the Office of Education in the holding of conferences and investigations during the year beginning October 1, 1939.

$3,300 for the use of the Co-operative Study in General Education in providing fellowships at the Summer Workshop at the University of Chicago. Available for a three-month period beginning June 1, 1939.

$1,800 to provide scholarships not to exceed $200 each to enable nine persons selected from the staffs of southern institutions of higher education to attend the Summer Workshop at the University of Chicago, from June 19 to July 21, 1939.

ALFRED H. PARROTT of the North Dakota Agricultural College was reinstated as Registrar, September 1, 1939. Viola Borderud, who has been Acting Registrar since July 31, 1937, resumed her former position as Assistant Registrar.

The "purge" of July 31, 1937 was repudiated by the Board of Administration that effected it. This purge involved the dismissal of seven of the ranking administrative officers of the institution and resulted in the establishment by the electorate in June 1938 of a new Board of Higher Education which was organized July 6, 1939. The first act of this Board was to offer reinstatement to all victims of the purge. The legal constitution of this Board has been approved by the North Central Association and the college is once again on the Association's list of accredited institutions.

Loras College observed the one-hundredth anniversary of its founding May 28-29, 1939. The name of the College was changed at that time from Columbia to Loras in honor of its founder Right Reverend Mathias Loras, first Catholic bishop of Iowa and the Northwest. An Educational Symposium was part of the program.

Gertrude M. Glassey has been appointed Registrar at Ohio Northern University.

Mother M. Ignatius, former Dean at the College of New Rochelle, has been appointed Vice-President of the College. Mother Thomas Aquinas, Professor of English, is now Dean of the College.

A $47,000,000 fountain pen has become the property of Northwestern University, the gift of President Walter Dill Scott. Dr. Scott has used this pen exclusively in accepting $47,528,181 given to the university during his 18-year administration. Dr. Scott, who will retire next fall, presented the pen to Harold H. Anderson, chairman of the Scott Hall Committee.

Wake Forest College announces a generous gift from the Bowman Gray Fund to provide building and endowment for a four-year medical school on the grounds of the North Carolina Baptist Hospital in Winston-Salem. The new unit will replace the two-year school which was established by the College in 1902.

Dr. Ralph B. Kenney, formerly vocational counselor in the public schools of Albany, New York, has been appointed Executive Secretary of the National Vocational Guidance Association. Dr. Kenney will also serve as Managing Editor of *Occupations, the Vocational Guidance Magazine,* the official publication of the Association. The headquarters of the Association have recently been moved to 425 West 123rd Street, New York City.

Frank K. Burgess, Assistant Registrar at Union College, Barbourville, Kentucky, has returned to Union College after a year's leave of absence devoted to graduate study at the University of Kentucky. Mr. Burgess worked under the direction of Dr. Leo M. Chamberlain, Registrar of the University of Kentucky.

BOOK REVIEWS

What a University President Has Learned, Lowell, A. Lawrence, New York, Macmillan, 1938, pp. vi + 150.

This book is rich with the penetrating observation and the ripe wisdom of Dr. Lowell's years as an administrator. It opens with a discussion of the task of a college president, including some observations on academic freedom, which is also treated again in the first chapter of the appendix. "A university," says Dr. Lowell, "is a collection of scholars representing many different interests and attitudes of mind, but it is also a society for the promotion and inparting of knowledge. . . . Now, among their many qualities, otherwise excellent, scholars occasionally tend to be mischief makers for reasons probably complex, but quite apart from the promotion of their scholarly ideas, and sometimes without being conscious of it. Such men may be conservative or radical, though they are usually extreme in some direction, and the objection to them is not on account of their views, but because their idea of lubricating machinery is to throw a monkey wrench into it. . . . Academic freedom consists in the right to form and express opinions of any kind rather than give vent to emotions, to tell what one has discovered by study rather than to explode one's sentiments, even if for the man himself it is often hard to distinguish them, and the emotional impulse is the more violent."

In the chapter on "Tools and the Man," Dr. Lowell compares the English civil service with the American, and finds in this comparison an example of the differences between the university systems here and abroad. "The questions in the English competitive examinations have no reference to the functions to be performed after appointment, the object being to obtain the most promising material young, and teach the men selected their duties afterwards. . . . The European selection, therefore, is of the best men, to be trained for their work, not the men who best know it beforehand. That distinction our people failed to grasp, and hence our civil service examinations have been based on immediate qualifications for the work to be done, on knowledge of the job, rather than on the calibre of the applicant." The American system "places an especially high value on training for direct utility. It is a difference between the conceptions of education in Europe and America, of degree rather than of kind, but still real. In Europe more stress is laid upon developing the mind, upon the larger aspects of schooling; and here more upon teaching the special actions to be performed, the machinery to be used and the formulas to be applied."

"The fixed curriculum of many subjects has the advantage of giving an acquaintance with them all, thereby preventing too narrow an education;

and as the curriculum is the same for everyone it provokes competition, . . . while on the other hand, the specialized system, commonly called here that of concentration, or majors, makes possible more advanced, and hence more profound, work, a mastery of something instead of a superficial knowledge of many things, and it increases greatly the interest in the subject. Concentration may, no doubt, be used as a means of acquiring tools instead of developing the student's mind, and this is a real defect if the instruction is given with that object; but in the undergraduate years of a truly liberal college it is not a very serious danger. After all the most important thing is not what is taught but what is learned, not what goeth into the belly but what cometh out of the heart." In teaching, "we are apt to measure the amount in the mind by what has been poured into it, although we know it leaks and have no idea how much. Hence the error of counting by courses, the greatest defect in the American educational system. . . . While for the ordinary American college student it is easy to see the value of the tool that he thinks he will hereafter use, it is hard to appreciate the significance of a general improvement of his own natural powers. . . . Instead of applying the principles of self-education, there has been too much dragging of youth over the ground in perambulators and wondering why their running does not improve."

To the vexed question of examinations, Dr. Lowell devotes most of a chapter. "To discuss the full meaning of treating examinations as essentially a part of the educational process," he says, "would require a treatise based upon philosophy on the one side and statistics on the other. But perhaps it is not out of place to point out one of the incidental merits of examinations. When the writer was teaching government to several hundred freshmen, he would tell them before midyears that the art of passing examinations was a very important one. Naturally they laughed, until it was explained that it played a distinct part in the work of life. A doctor called to the bedside in an obscure case must try to recall all the diseases to which the symptoms of the patient may point. That is an examination. The lawyer who in trying a case is surprised by some evidence offered by his opponent, which he thinks inadmissible, must recall on the spur of the moment any case on the admission of evidence which may bear on the question. That is passing an examination. The capacity to call up needed memories embedded under the surface of the mind is a highly important one, which, like every other mental capacity, is capable of cultivation." There follows a review of the statistics gathered by the American Telephone and Telegraph Company[1] concerning the relationship of college grades and subsequent earning power, and also of a highly significant summary of an earlier study by Dr. Lowell of the correlation between

[1] Vide *Harper's Magazine* for May 1928.

Harvard University grades and later achievement by the same students in graduate schools of law and medicine.

In the chapter on "The Student Mind," Dr. Lowell discusses, among other things, the pros and cons of intercollegiate athletics. "Some people have thought intercollegiate sports so harmful that they ought to be abolished. That the extravagance is too great few sensible men would deny; although there is difficulty in reducing it when the coaches and players, present and past, are convinced that it cannot be done on any large scale without reducing the chance of victory. But it should be done, and one hopes is being done gradually. As for the distortion of values and the discordance with scholarly aims, they are more apparent than real; for the students as a whole do not share exaggerated views of some alumni and the newspapers, or over-estimate in the same degree the importance of victories. Nor is there any evidence that athletic contests interfere seriously with scholarship; for good scholars on a team are not uncommon, and occasionally the very highest are found among the players. To abolish intercollegiate games would probably reduce all interest in athletic exercise, and thereby promote other evils from which we now suffer little; nor is there any reason to suppose that it would promote scholarship. . . . Competition is the life-blood of youth; the natural impulse that leads him . . . to fit himself for the demands of later life."

It would be easy to multiply quotations from this charming and stimulating book, nor are the foregoing ones necessarily the choicest, but only some of those which have struck the reviewer as among the most timely or incisive. It is not common to find between the covers of one small volume so much of discernment, of tolerance, of humor, and of comprehension as Dr. Lowell has here distilled from his long years at the President's desk. A four-star book, to be read at leisure and deliberated at length.

Requirements for Certification of Teachers and Administrators, Robert C. Woellner and M. Aurilla Wood. Chicago, University of Chicago Press, 1939.

The publication summarizes the requirements for teachers' certificates in the various states, and contains also the recommendations of the several regional accrediting associations regarding qualifications of teachers. The previous editions have included requirements only for secondary and junior college certificates; this (fourth) edition adds to these the requirements for elementary and administrative certificates. The summaries of requirements have been approved by certificating authorities in each instance, and were up to date at the time of publication. There is also a list of sources of information regarding teacher application in the United States posses-

sions. The book will prove an extremely useful reference for any registrar dealing with questions of teacher certification.

The Contributions of Cumulative Personnel Records to a Teacher Education Program, Rebecca Catherine Tansil, Ph.D. New York, Bureau of Publications, Teachers College, Columbia University, 1939, pp. viii + 158.

This is a painstaking study of the development and use of cumulative personnel records at State Teachers College, Towson, Maryland, together with an attempt to appraise the contributions such records have made to the teacher-training program. The author has seen fit to admit at the outset the absence of adequate measures for weighing the results of guidance or personnel work, and therefore to make no attempt to reduce imponderables to mathematical tables. Instead, she has depended chiefly upon tabulated opinions of competent judges for her ratings of the record system and her appraisal of the individual items on the records. Her findings, very briefly summarized, are as follows: (1) That the personnel records are widely used by faculty and administrative officers, and that their use is increasing; (2) that the contributions to these records are increasing both in number and quality; (3) that while there is some difference of opinion as to the value of different items in the record, no item is considered without value, and staff members rate many of them as "extremely valuable"; (4) that the records are of great use in the initial placement of students, and afterwards for assisting the young teacher to become adjusted to his position and for improving the quality of supervision; (5) that personnel records, properly used, are a powerful factor in the personal and intellectual growth of students; and (6) that such records exert a strong influence toward individualization of instruction, by emphasizing the study of relationships rather than isolated factors in the personality of the individual.

The book contains a good bibliography on personnel procedures, particularly as related to record-keeping, and the appendix offers samples of the blanks used in obtaining information for this study, and of the cumulative personnel records of the college in question. While it deals with the question of personnel records within the limits of one institution, this study is a significant contribution toward a better application and evaluation of personnel methods everywhere.

IN THE JOURNALS

"Recent Research on Counseling" C. Gilbert Wrenn, *Occupations,* Vol. XVII, No. 8, May 1939, p. 694.

This is a review of a number of recent studies on counseling, including some suggestions for further studies of this subject.

"The Wealth of the States and Their Facilities for Higher Education" Richard H. Logsdon, *School and Society,* Vol. 50, No. 1285, August 12, 1939, p. 220.

This statistical treatment of the relationship between wealth of the individual states and their facilities for higher education indicates that there is a definite relationship. According to the several tables of this study, states tend to provide facilities somewhat in proportion to their wealth. Individual states vary considerably in the facilities they provide in relation to their wealth as indicated by the index of variation.

"College Education without High-school Graduation" Lily Oetchen, *The School Review,* Vol. XLVII, No. 3, March 1939, p. 182.

From 1934 to 1938 the University of Louisville with the special permission of the Southern Association has admitted thirty-five students who have completed three years of high school work. Carefully selected, these students have been compared with a control group on such items as quality point standing, ratings in National Sophomore Tests, participation in extra-curricular activities, opinions of students and parents. The result of the experiment has led the Committee on Entrance Matters of the Southern Association to state that "it urges the abandonment of all fixed lists of required college entrance credits, the consideration of differentiated curriculums suited to various levels of ability and preparation, and, in short, the entire adaptation of our higher education to individual differences."

" 'The Rich Get Richer' Applied to Universities" Ernest Victor Hollis, *School and Society,* Vol. 50, No. 1284, August 5, 1939, p. 180.

This is an analysis of data based on a government report of 122 private colleges and on two decades of gifts and bequests to 49 colleges and universities, as tabulated by the John Price Jones Corporation. Greater concentration of gifts and bequests in fewer institutions has been the trend since 1920. Already 50 per cent of the billion and a half dollar endowment belongs to 3 per cent of the 675 endowed colleges; 90 per cent is

controlled by 25 per cent of the institutions; 45 institutions own more than half of all American College endowment. For many of the schools endowment income has dropped 50 per cent in the past few years. As a result the trend in student fees is definitely upward, with the larger and better-equipped institutions increasing tuition without loss of enrolment. The financially weaker private schools tend to keep tuition near the depression level. Other statistics are included on income from sales and services, philanthropic grants, as well as gifts and bequests. The conclusion is that the trend in philanthropic giving is in keeping with trends in the production of wealth. In time the practice undoubtedly will eliminate the less well-financed private college and increase the volume of tax-supported higher education.

"Does Test Intelligence Increase at the College Level" T. M. Liversay, *Journal of Educational Psychology,* Vol. XXX, No. 1, January 1939, p. 63.

A study of fifty seniors in 1936 who were given the same Psychological Examination for College Freshmen "American Council on Education" as was given to the same group in 1931. Several statistical summaries of the study indicate that every student gained in total score.

"The Correlation between Age at Entrance and Success in College" Paul S. Dwyer, *Journal of Educational Psychology,* Vol. XXX, No. 4, April 1939, p. 251.

Those who are interested in this particular problem will find this article useful. Summaries are given of about twenty-five studies. Suggestions are offered for further studies of this type and quite an extensive bibliography is appended.

"High School Training and College Freshman Grades" C. A. Smith, *Journal of Educational Research,* Vol. XXXII, No. 6, February 1939, p. 401.

The high school records of freshmen who entered the University of Wisconsin in 1923-24 and in 1931-34 were studied to see if there could be a better correlation between high school work and the freshman program to avoid some of the failures of the first year in college. It was again found that very little difference in value can be placed on success in the various fields of high school study in predicting success in college. A comparison was then made of the grades made in the freshman year by those who had had the subject in high school with those who had not had the subject. In such subjects as biology, physics, and history, little or no influence was shown on freshman grades. Chemistry, languages and mathematics showed a distinct advantage for those who had the subject in high

school. Four years of high school English gave an advantage over those with three years of high school English. The results of the study are of interest to advisers in high school as well as in college who are asked to outline courses of study for their respective groups.

"Is It Crystal Gazing or Guidance?" Lawrence Riggs, *Educational Forum,* Vol. III, No. 3, March 1939, p. 285.

Current rumors give the impression that guidance, guidance specialists, and other factors of applied guidance courses are not far removed from crystal gazing. The article proceeds to remedy this misunderstanding by clarifying terms and purposes. In conclusion there is a summary of the qualities to be found in the person who undertakes to do personnel work in education.

"An Experimental Evaluation of the Senior Survey Course" Joseph C. Heston, *Educational Research Bulletin,* Vol. XVIII, No. 2, February 1, 1939, p. 40.

The Ohio State Department of Education has evolved a remedial program for use with high school seniors. This course gives one-half unit credit, covers one semester's work and includes methods of work and study, written English, and mathematics. The result of a study of this plan concludes that all students benefit from the remedial training of this senior survey course.

"Does NYA Work Affect the Academic Record of College Students?" Omar C. Held, *School and Society,* Vol. 50, No. 1284, August 5, 1939, p. 192.

A number of studies on this subject have been made at the Alabama College for Women, the University of New Mexico, and at the University of Pittsburgh. The conclusions indicate that NYA work did not affect the academic work of those college students.

"Trends in Certification of Teachers" Benjamin W. Frazier, *School Life,* Vol. 24, No. 4, January 1939, p. 123.

This is a summary of U. S. Office of Education Bulletin 1938, No. 12, entitled, "Development of State Programs for the Certification of Teachers." Among the trends noted are a rise in minimum scholastic requirements; increase in specialization of certificates by subjects, grade levels, and fields of work; centralization of certification in state boards of education; decrease in issuance of certificates upon an interstate exchange basis, and upon examination; increase in the issuance of certificates upon the basis of institutional credentials; increased issuance of probationary rather

than unconditional life certificates; and the lengthening and enrichment of the education of applicants for certificates.

"The Future of the American Liberal-Arts College" George Barton Cutten, *Journal of Higher Education,* Vol. X, No. 2, February 1939, p. 59.

The Liberal-Arts college is facing a crisis which may materially modify its form and its functions. There are at least three major reasons; namely, supply of students, finances, and reorganization. There is an oversupply of colleges and an undersupply of students. The greatest number of prospective students will be about 1940, with a gradual decrease until 1980, when it will become fairly stable. Another reason for decreased supply of students is the growth of junior colleges and professional schools.

Financial difficulties are being caused by a decrease of gifts for endowments, taxation, legislative grants to public institutions, and increased cost of operation.

Trends in reorganization in education will prepare students for entrance at an earlier age and will bring about other changes in curriculums, requirements for degrees and graduate study that will directly affect the college.

"Fees in a Public System" James C. Shelburne, *Journal of Higher Education,* Vol. X, No. 2, February 1939, p. 83.

This is a summary of the extent to which the authority of the various state institutions to charge fees has been questioned and the reasoning of the courts where such cases have come before them for decision.

DIRECTORY OF REGIONAL ASSOCIATIONS

ALABAMA COLLEGIATE REGISTRARS ASSOCIATION
President, Mrs. Edna Reams Lamar, State Teachers College, Florence
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OCTOBER 7-8, 1939	—Second Annual Secondary Education Conference, Winfield, Kansas, Public Schools
OCTOBER 9-13, 1939	—Recreation Congress, Boston, Massachusetts
OCTOBER 17-20, 1939	—American Public Health Association, Pittsburgh
OCTOBER 19-21, 1939	—Minnesota-Dakota Association of Collegiate Registrars, Brookings, South Dakota
OCTOBER 26, 27, 1939	—Illinois Association of Collegiate Registrars
OCTOBER 26-27, 1939	—Conference of Educational Records Bureau, Hotel Roosevelt, New York City
NOVEMBER 1-3, 1939	—West Virginia State Education Association, Wheeling
NOVEMBER 2-4, 1939	—Iowa State Teachers Association, Des Moines
NOVEMBER 3-4, 1939	—Kansas State Teachers Association, Topeka, Salina, Hays, Dodge City, Wichita, Pittsburg
NOVEMBER 3-5, 1939	—New York State Association of Deans and Other Guidance Personnel, Elmira
NOVEMBER 4, 1939	—Foreign Policy Association, New York City
NOVEMBER 24-25, 1939	—National Council for the Social Studies, Kansas City
NOVEMBER 25, 1939	—Middle States Association of Collegiate Registrars, Atlantic City
NOVEMBER 30-DECEMBER 2	—National Council for the Social Studies, Kansas City

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